

Logical Reasoning Evaluation



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be

the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: We know that either many bulbs normally send up leaves during late fall and winter or plastic bags cause mushrooms to sweat and disintegrate. Once we know many bulbs normally

send up leaves during late fall and winter, we also know that the notion that 'pressure is exerted by liquids and gases and is equal in all directions' is untrue. On the condition that plastic bags cause mushrooms to sweat and disintegrate, it is definitely the case that the notion that 'pressure is exerted by liquids and gases and is equal in all directions' is untrue.

Statement: Pressure is exerted by liquids and gases and is equal in all directions.

Answer:



Premise 1: Either many bulbs normally send up leaves during late fall and winter (A) or plastic bags cause mushrooms to sweat and disintegrate (B). ($A \vee B$)

Premise 2: Once we know many bulbs normally send up leaves during late fall and winter (A), we also know that the notion that "pressure is exerted by liquids and gases and is equal in all directions" is untrue ($\neg D$). ($A \rightarrow \neg D$)

Premise 3: On the condition that plastic bags cause mushrooms to sweat and disintegrate (B), it is definitely the case that the notion that "pressure is exerted by liquids and gases and is equal in all directions" is untrue ($\neg D$). ($B \rightarrow \neg D$)

Using **Constructive Dilemma** with premises 1, 2, and 3:

1. $A \vee B$ (Premise 1)
2. $A \rightarrow \neg D$ (Premise 2)
3. $B \rightarrow \neg D$ (Premise 3)

From these, we conclude that $\neg D$ is true regardless of whether A or B is true.

Therefore, the statement "Pressure is exerted by liquids and gases and is equal in all directions" (D) is false.

Final Answer: FALSE



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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight

loss by increasing daily water intake only.
Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Whenever it is true that the statement that 'hikes sweating' is incorrect, 'most roses grow fairly rapidly' is true. Some people mistakenly believe that most roses grow fairly rapidly.

Statement: The statement 'hikes sweating' can be considered true.

Answer:



Premise 1: Whenever the statement that 'hikes sweating' is incorrect ($\neg H$), then 'most roses grow fairly rapidly' is true (R). Symbolically, this is $\neg H \rightarrow R$.

Premise 2: Some people mistakenly believe that 'most roses grow fairly rapidly'. Since their belief is mistaken, this means that 'most roses grow fairly rapidly' is false ($\neg R$).

Using **Modus Tollens** with Premises 1 and 2:

1. $\neg H \rightarrow R$ (Premise 1)

2. $\neg R$ (Premise 2)

From these, we infer:

- If $\neg H \rightarrow R$ and R is false ($\neg R$), then $\neg H$ must be false.
- Therefore, $\neg(\neg H)$ is true, which simplifies to H being true.

Thus, the statement 'hikes sweating' can be considered true.

Final Answer: TRUE



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Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Whenever it is true that fruit is poisonous to humans and livestock, 'the statement that 'if snow increases soil moisture, then most lipid is stored in the fat body, although small amounts are found in other cells' is incorrect' is true. The statement that states fruit is poisonous to humans and livestock is right.

Statement: We know that the claim that snow creates scenes is false.

Answer:



Premise 1: Whenever it is true that fruit is poisonous to humans and livestock (F), then the statement that "if snow increases soil moisture, then most lipid is stored in the fat body, although small amounts are found in other cells" is incorrect (L). Symbolically, this is $F \rightarrow L$.

Premise 2: The statement that fruit is poisonous to humans and livestock is right. Therefore, F is true. Using **Modus Ponens** with Premises 1 and 2:

1. $F \rightarrow L$ (Premise 1)
2. F (Premise 2)

From these, we infer:

- L is true.

Interpreting L : The statement "if snow increases soil moisture, then most lipid is stored in the fat body, although small amounts are found in other cells" is incorrect.

This means that the conditional statement $S \rightarrow M$ is false, where:

- S = "snow increases soil moisture"
- M = "most lipid is stored in the fat body, although small amounts are found in other cells"

A conditional statement being false implies S is true and M is false (since $\neg(S \rightarrow M) \equiv S \wedge \neg M$). So we have:

- S is true ("snow increases soil moisture" is true)
- $\neg M$ is true ("most lipid is not stored in the fat body")

However, there are no premises or logical connections provided that relate S ("snow increases soil moisture") or M to the claim that "snow creates scenes" (C).

Since there is no information linking S or any other premises to C , we cannot logically determine the truth value of the statement "We know that the claim that snow creates scenes is false."

Final Answer: UNCERTAIN



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Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or

power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Once we know size is a function of the ability to conquer space, we also know that most cobras possess deadly venom. There is good reason to believe that either leadership is a self-referral process or cats love a cozy, enclosed space to curl up in at nap time. Whenever it is true that leadership is a self-referral process, 'size is a function of the ability to conquer space' is true. When cats love a cozy, enclosed space to curl up in at nap time is true, it follows that size is a function of the ability to conquer space.

Statement: It is a simple truth that most cobras possess deadly venom.

Answer:



Premise 1: Once we know size is a function of the ability to conquer space (S), we also know that most cobras possess deadly venom (C). Symbolically, $S \rightarrow C$.

Premise 2: There is good reason to believe that either leadership is a self-referral process (L) or cats love a cozy, enclosed space to curl up in at nap time (K). Symbolically, $L \vee K$.

Premise 3: Whenever it is true that leadership is a self-referral process (L), "size is a function of the ability to conquer space" is true (S). Symbolically, $L \rightarrow S$.

Premise 4: When cats love a cozy, enclosed space to curl up in at nap time (K) is true, it follows that size is a function of the ability to conquer space (S). Symbolically, $K \rightarrow S$.

Using Constructive Dilemma with Premises 2, 3, and 4:

1. $L \vee K$ (Premise 2)
2. $L \rightarrow S$ (Premise 3)
3. $K \rightarrow S$ (Premise 4)

According to the Constructive Dilemma:

- From $(L \vee K)$, $(L \rightarrow S)$, and $(K \rightarrow S)$, we can conclude S .

Applying Modus Ponens with Premise 1:

4. $S \rightarrow C$ (Premise 1)
5. S (Conclusion from Constructive Dilemma)

From S and $S \rightarrow C$, we infer:

- C is true.

Therefore, the statement "It is a simple truth that most cobras possess deadly venom" is true.

Final Answer: TRUE



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Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: The claim that gray dogwood is well adapted for revegetating disturbed sites has no merit. Either one or both of these statements are true: sponges are simple on the surface, or some fungi produce proteins. Given that sponges are simple on the surface, it can be inferred that gray dogwood is well adapted for revegetating disturbed sites. Whenever it is true that some fungi produce proteins, 'the notion that 'most pathogen has effects' is untrue' is true.

Statement: The idea that most pathogen has effects is true.

Answer:



Premise 1: The claim that gray dogwood is well adapted for revegetating disturbed sites has no merit. This means that "gray dogwood is well adapted for revegetating disturbed sites" is false. Let's denote this as:

- G = "Gray dogwood is well adapted for revegetating disturbed sites."
- Therefore, $\neg G$ is true.

Premise 2: Either sponges are simple on the surface or some fungi produce proteins. Symbolically:

- S = "Sponges are simple on the surface."
- F = "Some fungi produce proteins."
- So, $S \vee F$ is true.

Premise 3: Given that sponges are simple on the surface, it can be inferred that gray dogwood is well adapted for revegetating disturbed sites. Symbolically:

- $S \rightarrow G$

Premise 4: Whenever it is true that some fungi produce proteins, the notion that "most pathogen has effects" is untrue. Let:

- P = "Most pathogen has effects."
- So, $F \rightarrow \neg P$

Our Statement: "The idea that most pathogen has effects is true." This means P is true.

Logical Reasoning:

1. From **Premise 1** and **Premise 3**:
 - $S \rightarrow G$ (Premise 3)
 - $\neg G$ (Premise 1)
 - Using **Modus Tollens**: From $S \rightarrow G$ and $\neg G$, we infer $\neg S$.
 - Therefore, S is false.
2. From **Premise 2** and the result $\neg S$:
 - $S \vee F$ (Premise 2)
 - $\neg S$ (from step 1)
 - Using **Disjunctive Syllogism**: From $S \vee F$ and $\neg S$, we infer F .
 - Therefore, F is true.
3. From F being true and **Premise 4**:
 - $F \rightarrow \neg P$ (Premise 4)
 - F is true (from step 2)
 - Using **Modus Ponens**: From $F \rightarrow \neg P$ and F , we infer $\neg P$.
 - Therefore, P is false.

Conclusion:

- Our reasoning shows that P is false.
- The statement claims that P is true.
- Therefore, the premises directly contradict the statement.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement

- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: The claim that images are the soul of pathology is false. It is a fact that either vernal pools are a unique habitat that is at risk for several reasons or either images are the soul of pathology or most caffeine affects brains. Some people mistakenly believe that vernal pools are a unique habitat that is at risk for several reasons.

Statement: Caffeine is a drug that affects the human body.

Answer:



Premise 1: The claim that images are the soul of pathology is false. This means $\neg A$ is true, where:

- A = "Images are the soul of pathology."

Premise 2: It is a fact that either vernal pools are a unique habitat that is at risk for several reasons, or either images are the soul of pathology or most caffeine affects brains. This can be symbolized as:

- $B \vee (A \vee C)$, which simplifies to $B \vee A \vee C$, where:
 - B = "Vernal pools are a unique habitat that is at risk for several reasons."
 - C = "Most caffeine affects brains."

Premise 3: Some people mistakenly believe that vernal pools are a unique habitat that is at risk for several reasons. Since their belief is mistaken, B is false ($\neg B$).

Logical Reasoning:

1. From Premises 1 and 3:

- We have $\neg A$ and $\neg B$.

2. Using Disjunctive Syllogism on Premise 2:

- Premise 2 states $B \vee A \vee C$.
- Since $\neg B$ and $\neg A$, we eliminate B and A from the disjunction.
- Therefore, C must be true.

3. Conclusion from Step 2:

- C is true: "Most caffeine affects brains."

Assessing the Statement:

- **Statement:** "Caffeine is a drug that affects the human body."
- From C , we know that "Most caffeine affects brains."
- While this suggests that caffeine affects a part of the human body (the brain), there is no premise that defines caffeine as a drug or explicitly states that it affects the human body in general.
- The premises do not provide enough information to conclude that caffeine is a drug affecting the human body.

Final Answer: UNCERTAIN



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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Either disability insurance is really income insurance or jackpots are awards. Given that disability insurance is really income insurance, it can be inferred that nymph feeds on live prey. When jackpots are awards is true, it follows that the statement 'if mutations can also occur from exposure to radiation or chemicals over a man's life, then some plants develop small concentric rings on the foliage or fruit' can be considered false. We know that either either babies frequently take up to two years to completely heal or homemade mustards retain the dull yellow of the seed and are far superior in flavor and aroma or sweet sugar becomes necessity. On the condition that either babies frequently take up to two years to completely heal or homemade mustards retain the dull yellow of the seed and are far superior in flavor and aroma, it is definitely the case that the claim that nymph feeds on live prey does not reflect reality. Assuming sweet sugar becomes necessity, we know that the claim that nymph feeds on live prey does not reflect reality.

Statement: When mutations can also occur from exposure to radiation or chemicals over a man's life is true, it follows that some plants develop small concentric rings on the foliage or fruit.

Answer:



Premise 1: Either disability insurance is really income insurance or jackpots are awards.

- Let D = "Disability insurance is really income insurance."
- Let J = "Jackpots are awards."
- Symbolically: $D \vee J$

Premise 2: Given that disability insurance is really income insurance, it can be inferred that nymph feeds on live prey.

- Let N = "Nymph feeds on live prey."

- Symbolically: $D \rightarrow N$

Premise 3: When jackpots are awards is true, it follows that the statement "if mutations can also occur from exposure to radiation or chemicals over a man's life, then some plants develop small concentric rings on the foliage or fruit" can be considered false.

- Let M = "Mutations can also occur from exposure to radiation or chemicals over a man's life."
- Let S = "Some plants develop small concentric rings on the foliage or fruit."
- The statement "if M , then S " is false when M is true and S is false.
- Symbolically: $J \rightarrow (M \wedge \neg S)$

Premise 4: Either babies frequently take up to two years to completely heal, or homemade mustards retain the dull yellow of the seed and are far superior in flavor and aroma, or sweet sugar becomes necessity.

- Let B = "Babies frequently take up to two years to completely heal."
- Let H = "Homemade mustards retain the dull yellow of the seed and are far superior in flavor and aroma."
- Let Sg = "Sweet sugar becomes necessity."
- Symbolically: $B \vee H \vee Sg$

Premise 5: On the condition that B or H , it is definitely the case that the claim that N does not reflect reality.

- Symbolically: $(B \vee H) \rightarrow \neg N$

Premise 6: Assuming Sg , we know that the claim that N does not reflect reality.

- Symbolically: $Sg \rightarrow \neg N$

Logical Reasoning:

1. **From Premise 4**, at least one of B , H , or Sg is true:
 - $B \vee H \vee Sg$ is true.
2. **From Premise 5 and Premise 6:**
 - If $B \vee H$ is true, then $\neg N$ (Premise 5).
 - If Sg is true, then $\neg N$ (Premise 6).
 - Since at least one of $B \vee H \vee Sg$ is true, $\neg N$ must be true.
 - Therefore, N is false.
3. **Using Modus Tollens on Premise 2:**
 - $D \rightarrow N$ (Premise 2).
 - $\neg N$ is true (from step 2).
 - Therefore, $\neg D$ is true.
4. **Using Disjunctive Syllogism on Premise 1:**
 - $D \vee J$ (Premise 1).
 - $\neg D$ is true (from step 3).
 - Therefore, J is true.
5. **Using Modus Ponens on Premise 3:**
 - $J \rightarrow (M \wedge \neg S)$ (Premise 3).

- J is true (from step 4).
- Therefore, $M \wedge \neg S$ is true.
- So, M is true and S is false.

6. Assessing the Statement:

- The statement is $M \rightarrow S$.
- Since M is true and S is false, the conditional $M \rightarrow S$ is false.
- Therefore, the statement is **FALSE**.

Final Answer: FALSE



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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.
Therefore, the final answer is FALSE.

Paragraph: The statement, if caterpillar is a larva, then some pigs can have digestive symptoms, does not hold. It is rational to believe that either most stars look like shiny dots from Earth, because they are far away or if the claim that either porosity is the space around the mineral grains that make up the rock or thought is a product of thinking has no merit, then if caterpillar is a larva, then some pigs can have digestive symptoms. On the condition that rinks are buildings, it is definitely the case that the claim that most stars look like shiny dots from Earth, because they are far away has no merit. It is the case that rinks are buildings.

Statement: It is a fact that either porosity consists of the tiny spaces in the rock that hold the oil or gas or thoughts are beliefs.

Answer:



Premise 1: The statement "If caterpillar is a larva, then some pigs can have digestive symptoms" does not hold. Let's denote this as:

- A = "If caterpillar is a larva, then some pigs can have digestive symptoms."
- Therefore, $\neg A$ is true.

Premise 2: It is rational to believe that either:

1. Most stars look like shiny dots from Earth, because they are far away.
2. If the claim that either "porosity is the space around the mineral grains that make up the rock" or "thought is a product of thinking" has no merit, then A holds.

Let's define:

- B = "Most stars look like shiny dots from Earth, because they are far away."
- C = "The claim that either 'porosity is the space around the mineral grains that make up the rock' or 'thought is a product of thinking' has no merit."

So Premise 2 can be symbolized as:

- $B \vee (C \rightarrow A)$

Premise 3: On the condition that rinks are buildings, it is definitely the case that the claim that B has no merit.

- D = "Rinks are buildings."
- So, $D \rightarrow \neg B$

Premise 4: It is the case that rinks are buildings.

- D is true.

Our Statement: "It is a fact that either porosity consists of the tiny spaces in the rock that hold the oil or gas or thoughts are beliefs."

Let's define:

- E = "Porosity consists of the tiny spaces in the rock that hold the oil or gas."
- F = "Thoughts are beliefs."
- So, the statement is $E \vee F$

Logical Reasoning:

1. From **Premise 4**:
 - D is true.
2. From **Premise 3** and Modus Ponens:
 - $D \rightarrow \neg B$ (Premise 3)
 - D is true (Premise 4)
 - Therefore, $\neg B$ is true.
 - So, B is false.
3. From **Premise 2**:
 - $B \vee (C \rightarrow A)$ (Premise 2)
 - Since B is false, the disjunction simplifies to $C \rightarrow A$.
 - So, we have $C \rightarrow A$.
4. From **Premise 1**:
 - $\neg A$ is true.
 - So, A is false.
5. Analyzing $C \rightarrow A$:
 - We have $C \rightarrow A$ and A is false.
 - A conditional statement $C \rightarrow A$ is false only when C is true and A is false.
 - Since A is false and $C \rightarrow A$ is part of our premises (assumed true), C must be false for the conditional to be true.
 - Therefore, C is false.
6. Understanding C :
 - C = "The claim that either 'porosity is the space around the mineral grains that make up the rock' or 'thought is a product of thinking' has no merit."
 - Symbolically, $C = \neg(E' \vee G)$, where:
 - E' = "Porosity is the space around the mineral grains that make up the rock."
 - G = "Thought is a product of thinking."
7. Since C is false:
 - $\neg C$ is true.
 - Therefore, $\neg C = E' \vee G$ is true.
 - So, at least one of E' or G is true.
8. Comparing E' and E , and G and F :
 - E = "Porosity consists of the tiny spaces in the rock that hold the oil or gas."
 - E' = "Porosity is the space around the mineral grains that make up the rock."
 - F = "Thoughts are beliefs."
 - G = "Thought is a product of thinking."
 - While E and E' are similar, they are not identical.
 - Similarly, F and G are related but not the same.

9. Conclusion:

- We know that $E' \vee G$ is true from step 7.
- However, we cannot definitively say that $E \vee F$ is true based on $E' \vee G$ being true, because the statements are not equivalent.
- There is no information provided to establish the truth values of E or F directly.

Final Answer: UNCERTAIN



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Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: We know that either adelgids are a small group of insects that are closely related to aphids or acorns are resistant to insects and disease. Provided that those that suggest if adelgids are a small group of insects that are closely related to aphids, then older crabs molt less frequently but require the same care are wrong, we know that snakes are important for keeping rodent populations in check and in turn are food for birds of prey. The claim that snakes are important for keeping rodent populations in check and in turn are food for birds of prey is false. On the condition that it is a common misconception that if acorns are resistant to insects and disease, then some storms push arctic air mass, it is definitely the case that if salvage is about saving skills as well as objects, then indicators are chemicals which change colour when they are put into acids or alkalis. The statement that 'if salvage is about saving skills as well as objects, then indicators are chemicals which change colour when they are put into acids or alkalis' is incorrect.

Statement: Either older crabs molt less frequently but require the same care or some storms push arctic air mass.

Answer:



Premise 1: We know that either adelgids are a small group of insects that are closely related to aphids (A) or acorns are resistant to insects and disease (B).

- Symbolically: $A \vee B$

Premise 2: Provided that those who suggest "If adelgids are a small group of insects that are closely related to aphids (A), then older crabs molt less frequently but require the same care (C)" are wrong, we know that snakes are important for keeping rodent populations in check and in turn are food for birds of prey (D).

- Symbolically: $\neg(A \rightarrow C) \rightarrow D$

Premise 3: The claim that snakes are important for keeping rodent populations in check and in turn are food for birds of prey is false.

- Symbolically: $\neg D$

Premise 4: On the condition that it is a common misconception that if acorns are resistant to insects and disease (B), then some storms push arctic air mass (G), it is definitely the case that if salvage is about saving skills as well as objects (E), then indicators are chemicals which change colour when they are put into acids or alkalis (F).

- Symbolically: $H \rightarrow (E \rightarrow F)$
- Where H = "It is a common misconception that $B \rightarrow G$ "

Premise 5: The statement "If salvage is about saving skills as well as objects (E), then indicators are chemicals which change colour when they are put into acids or alkalis (F)" is incorrect.

- Symbolically: $\neg(E \rightarrow F)$

Logical Reasoning:

1. From Premise 3 and Premise 2:

- Premise 2: $\neg(A \rightarrow C) \rightarrow D$
- Premise 3: $\neg D$ (D is false)
- Using **Modus Tollens**:
 - From $\neg(A \rightarrow C) \rightarrow D$ and $\neg D$, we infer $\neg\neg(A \rightarrow C)$, which simplifies to $A \rightarrow C$.
 - Therefore, $A \rightarrow C$ is true.

2. From Premise 1:

- $A \vee B$ is true.

3. Considering two cases from $A \vee B$:

- **Case 1:** A is true.
 - Since $A \rightarrow C$ is true (from step 1), and A is true, then by **Modus Ponens**, C is true.
 - Therefore, C is true.
- **Case 2:** A is false.
 - Then B must be true.
 - However, we have no premises connecting B directly to G .

4. Analyzing Premise 4 and Premise 5:

- Premise 5 states that $\neg(E \rightarrow F)$ is true.
 - An implication $E \rightarrow F$ is false only if E is true and F is false.
 - Therefore, E is true and F is false.
- Premise 4: $H \rightarrow (E \rightarrow F)$
 - Since $E \rightarrow F$ is false, the consequent is false.
 - Using **Modus Tollens**, from $H \rightarrow (E \rightarrow F)$ and $\neg(E \rightarrow F)$, we infer $\neg H$.
 - Therefore, H is false.
- H is "It is a common misconception that $B \rightarrow G$ ".
 - $\neg H$ means it is **not** a common misconception that $B \rightarrow G$.
 - This does not provide information about the truth value of $B \rightarrow G$, nor does it establish whether G is true.

5. Assessing the Statement:

- **Statement:** "Either older crabs molt less frequently but require the same care (C) or some storms push arctic air mass (G)."
- From **Case 1:** C is true.
 - Therefore, $C \vee G$ is true.
- From **Case 2:** B is true, but we cannot determine the truth value of G based on the given premises.
 - We have no information about G in this case.

6. Conclusion:

- Since we cannot ascertain the truth value of G when B is true, and C may not be true in that case, we cannot definitively conclude that the statement "Either C or G " is true.
- The premises do not provide sufficient information to determine the truth value of the statement in all cases.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Given that if cerebellar lesions can result in A. akinesia, then infant botulism is treated in a hospital in virtually all cases, it can be inferred that if most kittens go to homes, then eternal law governs morality and nature. Whenever it is true that cerebellar lesions can result in A. akinesia, 'infant botulism is treated in a hospital in virtually all cases' is true. One may reasonably assume that if some people mistakenly believe that if most kittens go to homes, then the statement that states eternal law governs morality and nature is false, then web pages are works of arts by hundreds of people. It is rational to believe that either adhesive coating is also the most

economical way to create custom patterns of adhesives or if some people mistakenly believe that if most kittens go to homes, then the statement that states eternal law governs morality and nature is false, then it is not the case that web pages are works of arts by hundreds of people. Some people mistakenly believe that adhesive coating is also the most economical way to create custom patterns of adhesives.

Statement: The statement that states kittens are much more susceptible than adult cats to all respiratory diseases is false.

Answer:



Premise 1: Given that if cerebellar lesions can result in A. akinesia (CL), then infant botulism is treated in a hospital in virtually all cases (IB), it can be inferred that if most kittens go to homes (MK), then eternal law governs morality and nature (EL).

- Symbolically:
 - $(CL \rightarrow IB) \Rightarrow (MK \rightarrow EL)$

Premise 2: Whenever it is true that cerebellar lesions can result in A. akinesia (CL), "infant botulism is treated in a hospital in virtually all cases" (IB) is true.

- Symbolically:
 - $CL \rightarrow IB$

From Premises 1 and 2:

- Since $CL \rightarrow IB$ is true (Premise 2), we can infer $MK \rightarrow EL$ from Premise 1.
- Therefore, $MK \rightarrow EL$ is established.

Premise 3: One may reasonably assume that if some people mistakenly believe that if most kittens go to homes (MK), then the statement that eternal law governs morality and nature (EL) is false, then web pages are works of arts by hundreds of people (WP).

- Let SPB represent "some people mistakenly believe that $MK \rightarrow \neg EL$ ".
- Symbolically:
 - $SPB \rightarrow WP$

Premise 4: It is rational to believe that either adhesive coating is also the most economical way to create custom patterns of adhesives (AC) or if SPB is true, then web pages are not works of art by hundreds of people ($\neg WP$).

- Symbolically:
 - $AC \vee (SPB \rightarrow \neg WP)$

Premise 5: Some people mistakenly believe that adhesive coating is also the most economical way to create custom patterns of adhesives (AC).

- Since their belief is mistaken, AC is false.

Logical Reasoning:

1. From **Premise 5**:
 - AC is false.
2. From **Premise 4** and the fact that AC is false:
 - $AC \vee (SPB \rightarrow \neg WP)$ simplifies to $SPB \rightarrow \neg WP$.
3. From **Premise 3**:
 - $SPB \rightarrow WP$.
4. Now, from steps 2 and 3:
 - $SPB \rightarrow WP$ and $SPB \rightarrow \neg WP$.
 - This leads to $SPB \rightarrow (WP \wedge \neg WP)$, which is a contradiction.
 - Therefore, SPB must be false.
 - So, it is not the case that some people mistakenly believe that $MK \rightarrow \neg EL$.
5. From **Premise 2** and the inference in **Premise 1**:
 - We have $MK \rightarrow EL$, but we have no information about the truth of MK or EL themselves.

Assessing the Statement:

- **Statement:** "The statement that kittens are much more susceptible than adult cats to all respiratory diseases is false."
- There is no premise or logical connection provided that relates to the susceptibility of kittens to respiratory diseases.
- None of the premises mention anything about kittens being more or less susceptible to diseases compared to adult cats.

Conclusion:

- The premises neither support nor contradict the statement about kittens' susceptibility to respiratory diseases.
- There is insufficient information to determine the truth value of the statement based solely on the given premises.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
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You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
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- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use

tobacco in one form or another in Canada, and it affects our lives in many ways.
 Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.
 Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: There is good reason to believe that either cannabis is a term that refers to marijuana and other drugs made from the same plant or most animals change slowly over centuries - a process of gradual evolution. Provided that most animals change slowly over centuries - a process of gradual evolution, we know that the claim that either ants are books or some people have surgery to remove the part of the brain where the seizures originate has no merit. It is a fact that either water comes from condensed moisture in the fuel tanks or nematodes are tiny worms that infect the weevil larvae and adults. Provided that water comes from condensed moisture in the fuel tanks, we know that if the statement, if cannabis is a term that refers to marijuana and other drugs made from the same plant, then the claim that either ants are books or some people have surgery to remove the part of the brain where the seizures originate has no merit, does not hold, then higher education provides a wide range of individual, societal, and economic benefits. Whenever it is true that nematodes are tiny worms that infect the weevil larvae and adults, 'if the statement, if cannabis is a term that refers to marijuana and other drugs made from the same plant, then the claim that either ants are books or some people have surgery to remove the part of the brain where the seizures originate has no merit, does not hold, then higher education provides a wide range of individual, societal, and economic benefits' is true. There is good reason to believe that either herbivores require food or the statement, higher education provides a wide range of individual, societal, and economic benefits, does not hold. We know that the claim that herbivores require food is false.

Statement: The claim that either ants are books or some people have surgery to remove the part

of the brain where the seizures originate has no merit.

Answer:



Premise 1: There is good reason to believe that either cannabis is a term that refers to marijuana and other drugs made from the same plant (C), or most animals change slowly over centuries—a process of gradual evolution (E).

Symbolically: $C \vee E$

Premise 2: Provided that most animals change slowly over centuries (E), we know that the claim that either ants are books (A) or some people have surgery to remove the part of the brain where the seizures originate (P) has no merit (S).

Symbolically: $E \rightarrow S$

Premise 3: It is a fact that either water comes from condensed moisture in the fuel tanks (W), or nematodes are tiny worms that infect the weevil larvae and adults (N).

Symbolically: $W \vee N$

Premise 4: Provided that water comes from condensed moisture in the fuel tanks (W), we know that if the statement "if cannabis is a term that refers to marijuana and other drugs made from the same plant (C), then the claim that either ants are books or some people have surgery to remove the part of the brain where the seizures originate has no merit (S)" does not hold, then higher education provides a wide range of individual, societal, and economic benefits (H).

Symbolically: $W \rightarrow (\neg(C \rightarrow S) \rightarrow H)$

Premise 5: Whenever it is true that nematodes are tiny worms that infect the weevil larvae and adults (N), "if the statement 'if C then S does not hold, then H' " is true.

Symbolically: $N \rightarrow (\neg(C \rightarrow S) \rightarrow H)$

Premise 6: There is good reason to believe that either herbivores require food (F), or the statement "higher education provides a wide range of individual, societal, and economic benefits" does not hold ($\neg H$).

Symbolically: $F \vee \neg H$

Premise 7: We know that the claim that herbivores require food (F) is false.

Therefore, $\neg F$ is true.

Logical Reasoning:

1. From Premise 6 and Premise 7:

- $F \vee \neg H$ (Premise 6)
- $\neg F$ is true (Premise 7)
- Since F is false, $\neg H$ must be true.
- Therefore, H is false.

2. From Premise 3, consider two cases since $W \vee N$:

- **Case 1:** W is true.
 - From Premise 4:
 - $W \rightarrow (\neg(C \rightarrow S) \rightarrow H)$
 - Since W is true and H is false, the conditional simplifies to:
 - $\neg(C \rightarrow S) \rightarrow \text{False}$

- This conditional is false only if $\neg(C \rightarrow S)$ is true (antecedent true) and H is false (which it is).
- Therefore, $\neg(C \rightarrow S)$ must be true.
- Thus, $C \rightarrow S$ is false.
- **Case 2:** N is true.
 - From Premise 5:
 - $N \rightarrow (\neg(C \rightarrow S) \rightarrow H)$
 - Similarly, since H is false, $\neg(C \rightarrow S)$ must be true.
 - Thus, $C \rightarrow S$ is false.

3. Understanding $C \rightarrow S$ is false:

- An implication $C \rightarrow S$ is false only when C is true and S is false.
- Therefore, C is true, and S is false.

4. From Premise 1:

- $C \vee E$ (Premise 1)
- Since C is true, E can be true or false, but from Premise 2:
 - $E \rightarrow S$
 - Since S is false, if E were true, then $E \rightarrow S$ would be false (true implies false).
 - But Premise 2 states $E \rightarrow S$ is true, so E must be false.

5. Conclusion:

- C is true, E is false, and S is false.
- The statement S is "The claim that either ants are books (A) or some people have surgery to remove the part of the brain where the seizures originate (P) has no merit."
- Since S is false, it means the claim has merit; that is, $A \vee P$ is true.
- However, we cannot determine individually whether A or P is true, but their disjunction $A \vee P$ is true.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
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You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
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Do not use your prior knowledge; your answer must be solely determined by the information

within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight

loss by increasing daily water intake only.
Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: The claim that phones are used for calling does not correspond with reality. One may reasonably assume that if psychic ownership is the idea that employees feel, think and act like owners, then if those that suggest lead toxicity causes haematological, gastrointestinal and neurological dysfunctions are wrong, then phones are used for calling. It is a fact that either bullies also report less feelings of closeness to their siblings or either psychic ownership is the idea that employees feel, think and act like owners or cortisol is steroids. The claim that bullies also report less feelings of closeness to their siblings has no merit. Either fleas deposit small white eggs on the animal, which usually fall off into the bedding area or if cortisol is steroids, then if those that suggest lead toxicity causes haematological, gastrointestinal and neurological dysfunctions are wrong, then phones are used for calling. We know that the claim that fleas deposit small white eggs on the animal, which usually fall off into the bedding area is false.

Statement: It is not true that lead toxicity causes haematological, gastrointestinal and neurological dysfunctions.

Answer:



Premise 1: The claim that phones are used for calling does not correspond with reality. This means that "Phones are used for calling" (P) is false. So, $\neg P$ is true.

Premise 2: One may reasonably assume that if psychic ownership is the idea that employees feel, think, and act like owners (O), then if those that suggest lead toxicity causes haematological, gastrointestinal, and neurological dysfunctions are wrong ($\neg L$), then phones are used for calling (P). Symbolically, $O \rightarrow (\neg L \rightarrow P)$.

Premise 3: It is a fact that either bullies also report less feelings of closeness to their siblings (B) or either psychic ownership is the idea that employees feel, think, and act like owners (O) or cortisol is steroids (C). Symbolically, $B \vee O \vee C$.

Premise 4: The claim that bullies also report less feelings of closeness to their siblings has no merit. So, $\neg B$ is true.

Premise 5: Either fleas deposit small white eggs on the animal, which usually fall off into the bedding area (F), or if cortisol is steroids (C), then if those that suggest lead toxicity causes haematological, gastrointestinal, and neurological dysfunctions are wrong ($\neg L$), then phones are used for calling (P). Symbolically, $F \vee [C \rightarrow (\neg L \rightarrow P)]$.

Premise 6: The claim that fleas deposit small white eggs on the animal, which usually fall off into the bedding area is false. So, $\neg F$ is true.

Logical Reasoning:

1. From Premise 3 and Premise 4:

- $B \vee O \vee C$ (Premise 3)
- $\neg B$ (Premise 4)
- Using **Disjunctive Syllogism**, we eliminate B and are left with $O \vee C$.

2. From Premise 5 and Premise 6:

- $F \vee [C \rightarrow (\neg L \rightarrow P)]$ (Premise 5)
- $\neg F$ (Premise 6)
- Using **Disjunctive Syllogism**, we eliminate F and are left with $C \rightarrow (\neg L \rightarrow P)$.

3. Considering the two possibilities from step 1:

- **Case 1:** O is true.
- **Case 2:** C is true.

4. Case 1:

- O is true.
- From Premise 2: $O \rightarrow (\neg L \rightarrow P)$.
- Using **Modus Ponens**, we conclude $\neg L \rightarrow P$ is true.

5. Case 2:

- C is true.
- From step 2: $C \rightarrow (\neg L \rightarrow P)$.
- Using **Modus Ponens**, we conclude $\neg L \rightarrow P$ is true.

6. In both cases, $\neg L \rightarrow P$ is true.

7. From Premise 1:

- $\neg P$ is true.

8. Using **Modus Tollens** on $\neg L \rightarrow P$ and $\neg P$:

- Since $\neg L \rightarrow P$ is true and P is false ($\neg P$ is true), we conclude that $\neg \neg L$ is true.
- This simplifies to L being true.

9. Assessing the Statement:

- The statement claims that $\neg L$ is true ("It is not true that lead toxicity causes haematological, gastrointestinal, and neurological dysfunctions").
- However, our reasoning shows that L is true.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Once we know elastic stains show breakage and retraction of the elastic fibers in the reticular dermis, we also know that women retire with far less retirement income, smaller pensions and less savings. When either pirates know locations or deism is rationalism is true, it follows that if elastic stains show breakage and retraction of the elastic fibers in the reticular dermis, then some people mistakenly believe that women retire with far less retirement income, smaller pensions and less savings. We know that at least one of two things is true: if some doctors now recommend that people supplement only with natural beta-carotene, then muslim men can

divorce by simply pronouncing triple talak and can have up to four wives, or fjord occurs along subduction zones. Should it be the case that if some doctors now recommend that people supplement only with natural beta-carotene, then muslim men can divorce by simply pronouncing triple talak and can have up to four wives, it follows that either pirates know locations or deism is rationalism. Some people mistakenly believe that thrips are common transport vehicles for the viruses. We know that either creeds have their rightful function in every land or if some people mistakenly believe that if fjord occurs along subduction zones, then either pirates know locations or deism is rationalism, then thrips are common transport vehicles for the viruses. The notion that 'creeds have their rightful function in every land' is untrue.

Statement: The claim that lobbyists are persuaders is false.

Answer:



Premise 1: Once we know elastic stains show breakage and retraction of the elastic fibers in the reticular dermis (E), we also know that women retire with far less retirement income, smaller pensions, and less savings (W).

- Symbolically: $E \rightarrow W$

Premise 2: When either pirates know locations (P) or deism is rationalism (D) is true, it follows that if elastic stains show breakage and retraction of the elastic fibers in the reticular dermis (E), then some people mistakenly believe that women retire with far less retirement income, smaller pensions, and less savings (S).

- Symbolically: $(P \vee D) \rightarrow (E \rightarrow S)$

Premise 3: We know that at least one of two things is true: if some doctors now recommend that people supplement only with natural beta-carotene (B), then Muslim men can divorce by simply pronouncing triple talak and can have up to four wives (M), or fjords occur along subduction zones (F).

- Symbolically: $(B \rightarrow M) \vee F$

Premise 4: Should it be the case that if some doctors now recommend that people supplement only with natural beta-carotene (B), then Muslim men can divorce by simply pronouncing triple talak and can have up to four wives (M), it follows that either pirates know locations (P) or deism is rationalism (D).

- Symbolically: $(B \rightarrow M) \rightarrow (P \vee D)$

Premise 5: Some people mistakenly believe that thrips are common transport vehicles for the viruses (T). Since their belief is mistaken, T is false.

Premise 6: We know that either creeds have their rightful function in every land (C) or if some people mistakenly believe that if fjords occur along subduction zones (F), then either pirates know locations (P) or deism is rationalism (D), then thrips are common transport vehicles for the viruses (T).

- Symbolically: $C \vee ([\text{SPMB}(F \rightarrow (P \vee D))]) \rightarrow T$

Premise 7: The notion that creeds have their rightful function in every land is untrue. So C is false.

Logical Reasoning:

1. From Premise 7 and Premise 6:

- Since C is false, Premise 6 simplifies to: $[SPMB(F \rightarrow (P \vee D))] \rightarrow T$
- We know T is false (Premise 5).

2. Analyzing the Implication:

- The implication $[SPMB(F \rightarrow (P \vee D))] \rightarrow T$ has a false consequent (T is false).
- For the implication to be false, the antecedent must be true (i.e., some people mistakenly believe $F \rightarrow (P \vee D)$).

3. But we have no information about whether people mistakenly believe $F \rightarrow (P \vee D)$. There's no premise confirming the truth value of the antecedent.

4. From Premises 3 and 4:

- Premise 3: $(B \rightarrow M) \vee F$
- Premise 4: $(B \rightarrow M) \rightarrow (P \vee D)$

Case 1: Suppose $B \rightarrow M$ is true.

- Then, from Premise 4, $P \vee D$ is true.
- From Premise 2, since $P \vee D$ is true, we have $E \rightarrow S$.
- Without information on E or S , we cannot proceed further.

Case 2: Suppose F is true.

- We have no additional premises that connect F directly to other statements except through the complex implication in Premise 6, which we cannot fully evaluate.

5. Assessing the Statement:

- **Statement:** "The claim that lobbyists are persuaders is false." Symbolically, $\neg L$.
- None of the premises mention lobbyists (L) or persuaders, nor do they provide any logical connection to L .

6. Conclusion:

- The premises provided do not contain any information about lobbyists or persuaders.
- Therefore, we cannot determine the truth value of the statement based solely on the given premises.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement

- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: At least one of two things is true: if place names can tell the history of an area, then most violent disorder has effects, or computers use seasons in calculations. Provided that if place names can tell the history of an area, then most violent disorder has effects, we know that either grilled foods can be high in carcinogens due to exposure to an open flame or microwave ovens consume the least amount of energy and are highly space efficient. On the condition that computers use seasons in calculations, it is definitely the case that either grilled foods can be high in carcinogens due to exposure to an open flame or microwave ovens consume the least amount of energy and are highly space efficient. Should it be the case that it is not true that if grilled foods can be high in carcinogens due to exposure to an open flame, then either medical conditions are events or duckweeds have a worldwide distribution, especially temperate and tropical regions, it follows that black tea is kind of like afternoon tea when a family finish the butter tea made in the morning. The statement that 'black tea is kind of like afternoon tea when a family finish the butter tea made in the morning' is incorrect. On the condition that the statement that states if microwave ovens consume the least amount of energy and are highly space efficient, then either medical conditions are events or duckweeds have a worldwide distribution, especially temperate and tropical regions is false, it is definitely the case that the statement that states men die in just months after exposure is false. It is rational to believe that either lower sulfur means cleaner air or if the statement that states if microwave ovens consume the least amount of energy and are highly space efficient, then either medical conditions are events or duckweeds have a worldwide distribution, especially temperate and tropical regions is false, then men die in just months after exposure. The statement that 'lower sulfur means cleaner air' is incorrect.

Statement: The claim that either medical conditions are events or duckweeds have a worldwide distribution, especially temperate and tropical regions does not correspond with reality.

Answer:



Premise 1: At least one of two things is true:

- $(P \rightarrow V)$ or C
- Where:
 - P : Place names can tell the history of an area.
 - V : Most violent disorder has effects.
 - C : Computers use seasons in calculations.

Symbolically: $(P \rightarrow V) \vee C$

Premise 2: If $P \rightarrow V$, then $G \vee M$

- G : Grilled foods can be high in carcinogens due to exposure to an open flame.
- M : Microwave ovens consume the least amount of energy and are highly space efficient.

Symbolically: $(P \rightarrow V) \rightarrow (G \vee M)$

Premise 3: If C , then $G \vee M$

Symbolically: $C \rightarrow (G \vee M)$

Conclusion from Premises 1, 2, and 3:

- Since $(P \rightarrow V) \vee C$ is true and both $(P \rightarrow V) \rightarrow (G \vee M)$ and $C \rightarrow (G \vee M)$ are true, we can conclude that $G \vee M$ is true.

Premise 4: If $\neg(G \rightarrow (E \vee D))$, then B

- E : Medical conditions are events.
- D : Duckweeds have a worldwide distribution.
- B : Black tea is like afternoon tea when a family finishes the butter tea made in the morning.

Symbolically: $\neg(G \rightarrow (E \vee D)) \rightarrow B$

Premise 5: $\neg B$ (The statement about black tea is incorrect)

From Premise 4 and 5:

- Since $\neg B$ is true, by **Modus Tollens**, $\neg(G \rightarrow (E \vee D))$ must be false.
- Therefore, $G \rightarrow (E \vee D)$ is true.

Premise 6: If $\neg(M \rightarrow (E \vee D))$, then $\neg K$

- K : Men die in just months after exposure.

Symbolically: $\neg(M \rightarrow (E \vee D)) \rightarrow \neg K$

Premise 7: Either L or $[\neg(M \rightarrow (E \vee D)) \rightarrow K]$

- L : Lower sulfur means cleaner air.

Symbolically: $L \vee [\neg(M \rightarrow (E \vee D)) \rightarrow K]$

Premise 8: $\neg L$ (The statement about lower sulfur is incorrect)

From Premise 7 and 8:

- Since $\neg L$ is true, $[\neg(M \rightarrow (E \vee D)) \rightarrow K]$ must be true.

From Premises 6 and the above:

- We have $\neg(M \rightarrow (E \vee D)) \rightarrow \neg K$ (Premise 6)
- And $\neg(M \rightarrow (E \vee D)) \rightarrow K$ (from Premise 7 and 8)
- This leads to $\neg(M \rightarrow (E \vee D)) \rightarrow (K \wedge \neg K)$, which is a contradiction.
- Therefore, $\neg(M \rightarrow (E \vee D))$ must be false.
- So, $M \rightarrow (E \vee D)$ is true.

Conclusion:

- Since $G \vee M$ is true (from earlier) and both $G \rightarrow (E \vee D)$ and $M \rightarrow (E \vee D)$ are true, we conclude that $E \vee D$ is true.
- Therefore, the statement $\neg(E \vee D)$ is false.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: It is reasonable to believe that amphetamines can be habit-forming for some people. The statement that 'dragon is a mythical creature' is incorrect. Assuming amphetamines can be habit-forming for some people, we know that allergies accompany or contribute to ear infection in many instances. Provided that allergies accompany or contribute to ear infection in many instances, we know that either biennials live two years before they produce their seeds and die or the claim that encryption allows information to be translated into un-decipherable code is false. We know that either conspirators are criminals or either dragon is a mythical creature or it is a common misconception that biennials live two years before they produce their seeds and die. The claim that conspirators are criminals has no merit.

Statement: The claim that encryption allows information to be translated into un-decipherable code is false.

Answer:



Premise 1: It is reasonable to believe that amphetamines can be habit-forming for some people. Let's denote this as:

- A : Amphetamines can be habit-forming for some people.
- So, A is true.

Premise 2: The statement that "dragon is a mythical creature" is incorrect.

- D : Dragon is a mythical creature.
- The statement D is incorrect, so D is false.

Premise 3: Assuming A , we know that allergies accompany or contribute to ear infection in many instances.

- B : Allergies accompany or contribute to ear infection in many instances.
- Given $A \rightarrow B$.

Premise 4: Provided that B , we know that either biennials live two years before they produce their seeds and die or the claim that encryption allows information to be translated into un-decipherable code is false.

- C : Biennials live two years before they produce their seeds and die.
- E : The claim that encryption allows information to be translated into un-decipherable code is false.
- So, $B \rightarrow (C \vee E)$.

Premise 5: We know that either conspirators are criminals or either dragon is a mythical creature or it is a common misconception that biennials live two years before they produce their seeds and die.

- F : Conspirators are criminals.
- G : It is a common misconception that biennials live two years before they produce their seeds and die.
- So, $F \vee (D \vee G)$.

Premise 6: The claim that conspirators are criminals has no merit.

- Therefore, $\neg F$ is true.

Logical Reasoning:

1. From Premise 1 and 3:

- A is true.
- $A \rightarrow B$ (Premise 3).
- By **Modus Ponens**, B is true.

2. From Premise 4:

- $B \rightarrow (C \vee E)$.
- B is true (from step 1).
- By **Modus Ponens**, $C \vee E$ is true.

3. From Premise 5 and Premise 6:

- $F \vee (D \vee G)$ (Premise 5).
- $\neg F$ is true (Premise 6).
- D is false (Premise 2).
- Therefore, G must be true (since F and D are false).

4. Understanding G :

- G : It is a common misconception that C .
- Since G is true, it means that C is commonly but incorrectly believed to be true.
- Therefore, C is actually false.

5. From step 2:

- $C \vee E$ is true.
- C is false (from step 4).
- Therefore, E must be true.

6. Interpreting E :

- E : The claim that encryption allows information to be translated into un-decipherable code is false.
- Since E is true, the claim is indeed false.

Conclusion:

- The premises lead us to conclude that the claim about encryption is false.
- Therefore, the statement "The claim that encryption allows information to be translated into un-decipherable code is false" is **TRUE**.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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- Modus Tollens
- Hypothetical Syllogism
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You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or

power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: If the claim that autologous transplantation uses the patient's own marrow has no merit, then falsifiable theories base on observations. It is a common misconception that corporations are creatures of both statute and contract. Given that human development is a broader concept a process of widening the range of people's choices, it can be inferred that if falsifiable theories base on observations, then corporations are creatures of both statute and contract. Provided that the statement, if it is a common misconception that human development is a broader concept a process of widening the range of people's choices, then animals expend energy, does not hold, we know that municipal government is the first order of government and the cornerstone of Canadian democracy. Should it be the case that the statement, if it is a common misconception that human development is a broader concept a process of widening the range of people's choices, then animals expend energy, does not hold, it follows that the claim that municipal government is the first order of government and the cornerstone of Canadian democracy is false. Either one or both of these statements are true: picture elements are part of monitors, or radium is used in cancer therapy and luminescent paint. Assuming picture elements are part of monitors, we know that if it is a common misconception that human development is a broader concept a process of widening the range of people's choices, then the statement 'animals expend energy' can be considered false. Should it be the case that radium is used in cancer therapy and luminescent paint, it follows that if it is a common misconception that human development is a broader concept a process of widening the range of people's choices, then the statement 'animals expend energy' can be considered false.

Statement: Lymphatic nodules are the building units of larger lymphatic organs.

Answer:



Premise 1: If the claim that autologous transplantation uses the patient's own marrow has no merit ($\neg A$), then falsifiable theories base on observations (F).

- Symbolically: $\neg A \rightarrow F$

Premise 2: It is a common misconception that corporations are creatures of both statute and contract (C).

- Since it's a common misconception, C is false.
- So, $\neg C$ is true.

Premise 3: Given that human development is a broader concept—a process of widening the range of people's choices (H)—it can be inferred that if falsifiable theories base on observations (F), then corporations are creatures of both statute and contract (C).

- Symbolically: $H \rightarrow (F \rightarrow C)$

Premise 4: Provided that the statement "If it is a common misconception that human development is a broader concept—a process of widening the range of people's choices (H), then animals expend energy (E)" does not hold, we know that municipal government is the first order of government and the cornerstone of Canadian democracy (M).

- The statement "If it is a common misconception that H , then E " does not hold.
- Symbolically: $\neg(\neg H \rightarrow E) \rightarrow M$

Premise 5: Should it be the case that the statement "If it is a common misconception that H , then E " does not hold, it follows that the claim that M is false.

- Symbolically: $\neg(\neg H \rightarrow E) \rightarrow \neg M$

Premise 6: Either one or both of these statements are true: picture elements are part of monitors (P), or radium is used in cancer therapy and luminescent paint (R).

- Symbolically: $P \vee R$

Premise 7: Assuming P , we know that if it is a common misconception that H , then the statement "animals expend energy (E)" can be considered false.

- Symbolically: $P \rightarrow (\neg H \rightarrow \neg E)$

Premise 8: Should it be the case that R , it follows that if it is a common misconception that H , then E can be considered false.

- Symbolically: $R \rightarrow (\neg H \rightarrow \neg E)$

Logical Reasoning:

1. From **Premise 6**, we know $P \vee R$ is true.
2. From **Premise 7** and **Premise 8**, both P and R lead to $\neg H \rightarrow \neg E$.
3. Using **Constructive Dilemma**:
 - $P \vee R$ (Premise 6)
 - $P \rightarrow (\neg H \rightarrow \neg E)$ (Premise 7)
 - $R \rightarrow (\neg H \rightarrow \neg E)$ (Premise 8)
 - Therefore, $\neg H \rightarrow \neg E$ is true.
4. The statement "If it is a common misconception that H , then E " is $\neg H \rightarrow E$.
5. Since $\neg H \rightarrow \neg E$ is true (from step 3), and $\neg H \rightarrow E$ is the statement in question, we can see that $\neg H \rightarrow E$ and $\neg H \rightarrow \neg E$ cannot both be true unless $\neg H$ is false (i.e., H is true), which contradicts our earlier inference.
6. The only way both $\neg H \rightarrow \neg E$ and $\neg H \rightarrow E$ can be reconciled is if $\neg H$ is false, so H is true.
7. However, this leads to $\neg H$ being false and H being true.
8. From **Premise 3**:
 - $H \rightarrow (F \rightarrow C)$
 - Since H is true, we have $F \rightarrow C$.
9. From **Premise 2**, $\neg C$ is true, so C is false.
10. For $F \rightarrow C$ to be true while C is false, F must be false.
11. From **Premise 1**:
 - $\neg A \rightarrow F$
 - Since F is false, $\neg A$ must be false, so A is true.
12. However, we lack information about M , E , or how they relate to the statement about lymphatic nodules.

Assessing the Statement:

- **Statement:** "Lymphatic nodules are the building units of larger lymphatic organs."
- There are **no premises** that mention lymphatic nodules, lymphatic organs, or any related concepts.
- Therefore, based solely on the provided premises, we cannot determine the truth value of the statement.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false. Therefore, the final answer is FALSE.

Paragraph: Given that the claim that if if most nymph requires oxygenate water, then oyster isa bivalve, then fluctuations seem to represent effects of mutations in the virus or episodic immune reactions does not reflect reality, it can be inferred that salt can also go from sea to land. At least one of two things is true: either leptons have no strong interactions or most dietary treatments can have harmful effects, or if the claim that if if most nymph requires oxygenate water, then oyster isa bivalve, then fluctuations seem to represent effects of mutations in the virus or episodic immune reactions does not reflect reality, then it is not the case that salt can also go from sea to land. The statement, either leptons have no strong interactions or most dietary treatments can have harmful effects, does not hold. Assuming external exposure occurs when the radiation source is outside the body, we know that if most nymph requires oxygenate water, then diversity characterizes our lifestyles and experiences, our philosophies and our religious journeys. external exposure occurs when the radiation source is outside the body. Provided that the notion that 'if diversity characterizes our lifestyles and experiences, our philosophies and our religious journeys, then oyster isa bivalve' is untrue, we know that websites are an important aspect of a company's image, in any language. The claim that websites are an important aspect of a company's image, in any language does not correspond with reality.

Statement: The statement 'fluctuations seem to represent effects of mutations in the virus or episodic immune reactions' can be considered true.

Answer:



Premise 1: The claim that "If most nymphs require oxygenated water (N), then oyster is a bivalve (O), then fluctuations seem to represent effects of mutations in the virus or episodic immune reactions (F)" does not reflect reality. This means:

- The statement $(N \rightarrow O) \rightarrow F$ is false.
- Symbolically: $\neg[(N \rightarrow O) \rightarrow F]$.

Given this, it can be inferred that "Salt can also go from sea to land" (S) is true:

- $\neg[(N \rightarrow O) \rightarrow F] \rightarrow S$.

Premise 2: At least one of the following is true:

1. Either leptons have no strong interactions (L), or most dietary treatments can have harmful effects (D).
2. Or, if $\neg[(N \rightarrow O) \rightarrow F]$, then $\neg S$.

Symbolically:

- $(L \vee D) \vee [\neg[(N \rightarrow O) \rightarrow F] \rightarrow \neg S]$.

Premise 3: The statement "Either leptons have no strong interactions or most dietary treatments can have harmful effects" does not hold:

- $\neg(L \vee D)$.

Premise 4: Assuming external exposure occurs when the radiation source is outside the body (E), we know that:

- If most nymphs require oxygenated water (N), then diversity characterizes our lifestyles and experiences (V).
- Symbolically: $E \rightarrow (N \rightarrow V)$.

Premise 5: External exposure occurs when the radiation source is outside the body:

- E is true.

Premise 6: Provided that the notion "If diversity characterizes our lifestyles and experiences (V), then oyster is a bivalve (O)" is untrue, we know that websites are an important aspect of a company's image (W):

- $\neg(V \rightarrow O) \rightarrow W$.

Premise 7: The claim that websites are an important aspect of a company's image does not correspond with reality:

- W is false.

Logical Reasoning:

1. From **Premise 5** and **Premise 4**:

- E is true.
- $E \rightarrow (N \rightarrow V)$.
- Using **Modus Ponens**, we conclude $N \rightarrow V$ is true.

2. From **Premise 6** and **Premise 7**:

- $\neg(V \rightarrow O) \rightarrow W$.
- W is false (so $\neg W$ is true).
- Using **Modus Tollens** on $\neg(V \rightarrow O) \rightarrow W$ and $\neg W$, we infer:
 - $\neg\neg(V \rightarrow O)$, which simplifies to $V \rightarrow O$ is true.

3. From steps 1 and 2:

- $N \rightarrow V$ is true.
- $V \rightarrow O$ is true.
- Using **Hypothetical Syllogism**, we deduce $N \rightarrow O$ is true.

4. From **Premise 1**:

- $\neg[(N \rightarrow O) \rightarrow F]$ is true.
- Since $N \rightarrow O$ is true (from step 3), the only way $(N \rightarrow O) \rightarrow F$ can be false is if F is false.
- Therefore, F is false.

5. **Assessing the Statement:**

- The statement claims that F is true: "The statement 'fluctuations seem to represent effects of mutations in the virus or episodic immune reactions' can be considered true."

- Our logical deduction shows F is false.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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- TRUE: When the premises in the paragraph lead to the statement
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- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be

the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: The statement 'all rock iguanas live in a tropical dry forest ecosystem' can be considered false. Whenever it is true that it is not true that if tables are smalls, then if most

families have a symbol that is somehow related, then pinworms look like tiny pieces of white thread, 'stratus clouds extend in flatter formations than cumulus ones' is true. It is a common misconception that stratus clouds extend in flatter formations than cumulus ones. It is a fact that either formal logic proceeds without meaning and without intentionality or anthropologists find ritualistic behavior. When formal logic proceeds without meaning and without intentionality is true, it follows that tables are smalls. On the condition that anthropologists find ritualistic behavior, it is definitely the case that tables are smalls. One may reasonably assume that if the notion that 'if the notion that 'most families have a symbol that is somehow related' is untrue, then all rock iguanas live in a tropical dry forest ecosystem' is untrue, then either advertising is the marriage of analysis and imagination, of marketing professional and artist or muscles burn more calories than fat, plus a muscular body has a higher metabolism. Whenever it is true that the notion that 'if the notion that 'most families have a symbol that is somehow related' is untrue, then all rock iguanas live in a tropical dry forest ecosystem' is untrue, 'the claim that either advertising is the marriage of analysis and imagination, of marketing professional and artist or muscles burn more calories than fat, plus a muscular body has a higher metabolism has no merit' is true.

Statement: The statement 'pinworms look like tiny pieces of white thread' can be considered false.

Answer:



Premise 1: The statement "All rock iguanas live in a tropical dry forest ecosystem" can be considered false.

- Let R = "All rock iguanas live in a tropical dry forest ecosystem."
- Therefore, $\neg R$ is true.

Premise 2: Whenever it is true that it is not true that "If tables are smalls, then if most families have a symbol that is somehow related, then pinworms look like tiny pieces of white thread," then "Stratus clouds extend in flatter formations than cumulus ones" is true.

- Let T = "Tables are smalls."
- Let F = "Most families have a symbol that is somehow related."
- Let P = "Pinworms look like tiny pieces of white thread."
- Let S = "Stratus clouds extend in flatter formations than cumulus ones."
- The complex statement translates to: If $\neg[T \rightarrow (F \rightarrow P)]$ is true, then S is true.

Premise 3: It is a common misconception that "Stratus clouds extend in flatter formations than cumulus ones."

- Since it is a misconception, S is false.
- Therefore, $\neg S$ is true.

Premise 4: It is a fact that either formal logic proceeds without meaning and without intentionality, or anthropologists find ritualistic behavior.

- Let L = "Formal logic proceeds without meaning and without intentionality."
- Let A = "Anthropologists find ritualistic behavior."

- So, $L \vee A$ is true.

Premise 5: When formal logic proceeds without meaning and without intentionality is true, it follows that tables are smalls.

- $L \rightarrow T$

Premise 6: On the condition that anthropologists find ritualistic behavior, it is definitely the case that tables are smalls.

- $A \rightarrow T$

Premise 7: One may reasonably assume that if the notion that "If the notion that 'most families have a symbol that is somehow related' is untrue, then all rock iguanas live in a tropical dry forest ecosystem" is untrue, then either advertising is the marriage of analysis and imagination, of marketing professional and artist, or muscles burn more calories than fat, plus a muscular body has a higher metabolism.

- Let $N = \neg[\neg F \rightarrow R]$ (The notion is untrue)
- Let $D =$ "Advertising is the marriage of analysis and imagination, of marketing professional and artist."
- Let $M =$ "Muscles burn more calories than fat, plus a muscular body has a higher metabolism."
- So, $N \rightarrow (D \vee M)$

Premise 8: Whenever it is true that the notion N is untrue, "The claim that either D or M has no merit" is true.

- Since N is untrue, $\neg N$ is true.
- Therefore, $\neg N \rightarrow \neg(D \vee M)$

Logical Reasoning:

1. From **Premise 3**, $\neg S$ is true.
2. From **Premise 2**, we have:
 - If $\neg[T \rightarrow (F \rightarrow P)]$ is true, then S is true.
 - Since $\neg S$ is true, the only way for the conditional to be true is if the antecedent $\neg[T \rightarrow (F \rightarrow P)]$ is false.
 - Therefore, $\neg[T \rightarrow (F \rightarrow P)]$ is false.
 - This means $T \rightarrow (F \rightarrow P)$ is true.
3. From **Premise 4**, $L \vee A$ is true.
4. From **Premise 5** and **Premise 6**:
 - $L \rightarrow T$
 - $A \rightarrow T$
 - Since $L \vee A$ is true, and both lead to T , we can conclude T is true.
5. From step 2 and T being true:
 - Since $T \rightarrow (F \rightarrow P)$ is true and T is true, by **Modus Ponens**, $F \rightarrow P$ is true.
6. To determine F , we analyze **Premise 1** and **Premise 7**:
 - From **Premise 1**, $\neg R$ is true.
 - From **Premise 7**, $N \rightarrow (D \vee M)$

- From **Premise 8**, $\neg N \rightarrow \neg(D \vee M)$
 - Since $\neg N \rightarrow \neg(D \vee M)$ is true and there is no contradiction stated, we infer that $D \vee M$ must be false (from $\neg N$ being true).
 - But this conflicts with **Premise 7** unless N is false.
 - Therefore, N is false, so $\neg N$ is true.
7. Since $N = \neg[\neg F \rightarrow R]$, and N is false:
- Therefore, $\neg[\neg F \rightarrow R]$ is false.
 - This means $\neg F \rightarrow R$ is true.
8. From $\neg F \rightarrow R$ being true and $\neg R$ being true (from **Premise 1**), we apply **Modus Tollens**:
- Since $\neg R$ is true and $\neg F \rightarrow R$ is true, $\neg\neg F$ must be true.
 - Therefore, F is true.
9. From step 5, $F \rightarrow P$ is true, and F is true (from step 8).
- By **Modus Ponens**, P is true.

Conclusion:

- Since P is true ("Pinworms look like tiny pieces of white thread" is true).
- The statement claims that this statement can be considered false.
- Therefore, the statement directly contradicts the premises.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most

dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Either one or both of these statements are true: eggs have a richer colour in the yolk, are larger and full of flavor, or either water enters the soil rapidly when it is dry and cracked and very slow when it is moist or most vernal ponds hold water. The claim that eggs have a richer colour in the yolk, are larger and full of flavor has no merit. The claim that most buffalo feeds on aquatic plants does not correspond with reality. Assuming nymph feeds on prey, we know that sherbet is a frozen mixture of sweetened fruit juice and water. There is good reason to believe that either healthy people can donate blood as often as once every eight weeks or geese thrive in marsh. Assuming healthy people can donate blood as often as once every eight weeks, we know that either most buffalo feeds on aquatic plants or if water enters the soil rapidly when it is dry and cracked and very slow when it is moist, then sherbet is a frozen mixture of sweetened fruit juice and water. Should it be the case that geese thrive in marsh, it follows that either most buffalo feeds on aquatic plants or if water enters the soil rapidly when it is dry and cracked and very slow when it is moist, then sherbet is a frozen mixture of sweetened fruit juice and water. It is not true that carbuncles are diseases. Once we know some people mistakenly believe that if the claim that if most vernal ponds hold water, then nymph feeds on prey does not reflect reality, then carbuncles are diseases, we also know that migratory birds have salt glands. The statement 'migratory birds have salt glands' can be considered false.

Statement: The claim that sherbet is a frozen mixture of sweetened fruit juice and water has no merit.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Either one or both of these statements are true:

- A : "Eggs have a richer colour in the yolk, are larger and full of flavor."
- B : "Water enters the soil rapidly when it is dry and cracked and very slow when it is moist."
- C : "Most vernal ponds hold water."
- Symbolically: $A \vee B \vee C$

2. **Premise 2:** The claim that A has no merit.

- Therefore, $\neg A$ is true.
- 3. **Premise 3:** The claim that "Most buffalo feed on aquatic plants" does not correspond with reality.
 - D : "Most buffalo feed on aquatic plants."
 - Therefore, $\neg D$ is true.
- 4. **Premise 4:** Assuming "Nymph feeds on prey," we know that "Sherbet is a frozen mixture of sweetened fruit juice and water."
 - E : "Nymph feeds on prey."
 - F : "Sherbet is a frozen mixture of sweetened fruit juice and water."
 - Symbolically: $E \rightarrow F$
- 5. **Premise 5:** There is good reason to believe that either "Healthy people can donate blood as often as once every eight weeks" or "Geese thrive in marsh."
 - G : "Healthy people can donate blood as often as once every eight weeks."
 - H : "Geese thrive in marsh."
 - Symbolically: $G \vee H$
- 6. **Premise 6:** Assuming G , we know that either D or $(B \rightarrow F)$.
 - Symbolically: $G \rightarrow [D \vee (B \rightarrow F)]$
- 7. **Premise 7:** Should it be the case that H , it follows that either D or $(B \rightarrow F)$.
 - Symbolically: $H \rightarrow [D \vee (B \rightarrow F)]$
- 8. **Premise 8:** It is not true that "Carbuncles are diseases."
 - I : "Carbuncles are diseases."
 - Therefore, $\neg I$ is true.
- 9. **Premise 9:** Once we know that "Some people mistakenly believe that if the claim that $C \rightarrow E$ does not reflect reality, then I ," we also know that "Migratory birds have salt glands."
 - J : "Some people mistakenly believe that if the claim that $C \rightarrow E$ does not reflect reality, then I ."
 - K : "Migratory birds have salt glands."
 - Symbolically: $J \rightarrow K$
- 10. **Premise 10:** The statement "Migratory birds have salt glands" can be considered false.
 - Therefore, $\neg K$ is true.

Statement to Evaluate:

- **Statement:** "The claim that F has no merit."
- Symbolically, this means $\neg F$.

Logical Reasoning:

1. **From Premise 1 and Premise 2:**
 - $A \vee B \vee C$ is true.
 - $\neg A$ is true.
 - Therefore, $B \vee C$ must be true.
2. **From Premise 5:**
 - $G \vee H$ is true.
3. **Consider two cases based on Premise 5:**
 - **Case 1:** G is true.
 - From Premise 6: $G \rightarrow [D \vee (B \rightarrow F)]$.
 - Since G is true, $D \vee (B \rightarrow F)$ is true.

- From Premise 3, $\neg D$ is true, so D is false.
- Therefore, $B \rightarrow F$ must be true.

○ **Case 2:** H is true.

- From Premise 7: $H \rightarrow [D \vee (B \rightarrow F)]$.
- Since H is true, $D \vee (B \rightarrow F)$ is true.
- Again, D is false ($\neg D$ is true).
- Therefore, $B \rightarrow F$ must be true.

4. Conclusion from Cases:

- In both cases, $B \rightarrow F$ is true.

5. From Step 1:

- $B \vee C$ is true.

6. Consider two sub-cases based on Step 5:

○ **Sub-case 1:** B is true.

- From Step 4, $B \rightarrow F$ is true.
- Using **Modus Ponens**, since B is true and $B \rightarrow F$ is true, F is true.

○ **Sub-case 2:** C is true.

- From Premise 9 and Premise 10:
 - $J \rightarrow K$ (Premise 9)
 - $\neg K$ is true (Premise 10)
 - Using **Modus Tollens**, $\neg J$ is true.
- Since J is false, it means no one mistakenly believes that $(C \rightarrow E)$ does not reflect reality.
- Therefore, $C \rightarrow E$ reflects reality and is true.
- Since C is true (assumed in this sub-case), using **Modus Ponens** on $C \rightarrow E$, we conclude E is true.
- From Premise 4: $E \rightarrow F$.
- Since E is true, using **Modus Ponens**, F is true.

7. Conclusion from Sub-cases:

- In both sub-cases, F is true.

8. Final Evaluation:

- Since F is true, the statement $\neg F$ ("The claim that F has no merit") is false.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.
 Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.
 Premise 2: The claim that most dolphins have year lifespans does not reflect reality.
 Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.
 Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.
 Therefore, the final answer is FALSE.

Paragraph: Given that the claim that children are especially vulnerable because their lungs are still developing is false, it can be inferred that nutrition is the most important issue in the treatment of chylothorax. Whenever it is true that most sharks grow brains, 'if the claim that children are especially vulnerable because their lungs are still developing is false, then enemies will have impact' is true. The statement 'most sharks grow brains' can be considered true. Given that those that suggest either people of colour is a race or if enemies will have impact, then the notion that 'nutrition is the most important issue in the treatment of chylothorax' is untrue are wrong, it can be inferred that the statement that 'many processes produce clusters of entities, generated by a small set of self-organizing processes' is incorrect. Either either red cells pick up oxygen in the lungs or techniques include use or epidemic diseases occur everywhere where there have been radiation accidents. When either red cells pick up oxygen in the lungs or techniques include use is true, it follows that the statement that 'people of colour is a race' is incorrect. Should it be the case that epidemic diseases occur everywhere where there have been radiation accidents, it follows that the statement that 'people of colour is a race' is incorrect. One may reasonably assume that if geraniums lose leaves, then if those that suggest either people of colour is a race or if enemies will have impact, then the notion that 'nutrition is the most important issue in the treatment of chylothorax' is untrue are wrong, then many processes produce clusters of entities, generated by a small set of self-organizing processes. It is a simple truth that geraniums lose leaves.

Statement: Many children have some form of renal disease.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Given that the claim that children are especially vulnerable because their lungs are still developing is false, it can be inferred that nutrition is the most important issue in the treatment of chylothorax.
 - Let C = "Children are especially vulnerable because their lungs are still developing."
 - Therefore, the claim that C is false is $\neg C$.
 - Let N = "Nutrition is the most important issue in the treatment of chylothorax."
 - So, $\neg C \rightarrow N$.
2. **Premise 2:** Whenever it is true that most sharks grow brains, "If the claim that children are especially vulnerable because their lungs are still developing is false, then enemies will have impact" is true.
 - Let S = "Most sharks grow brains."
 - Let E = "Enemies will have impact."
 - So, $S \rightarrow (\neg C \rightarrow E)$.
3. **Premise 3:** The statement "Most sharks grow brains" can be considered true.
 - S is true.
4. **Premise 4:** Given that those that suggest either people of colour is a race or if enemies will have impact, then the notion that nutrition is the most important issue in the treatment of chylothorax is untrue are wrong, it can be inferred that the statement that "Many processes produce clusters of entities, generated by a small set of self-organizing processes" is incorrect.
 - Let P = "People of colour is a race."
 - The suggestion is $P \vee (E \rightarrow \neg N)$.
 - Those suggesting this are wrong, so $\neg[P \vee (E \rightarrow \neg N)]$.
 - It can be inferred that $\neg M$, where M = "Many processes produce clusters of entities, generated by a small set of self-organizing processes."
5. **Premise 5:** Either [either red cells pick up oxygen in the lungs or techniques include use] or epidemic diseases occur everywhere where there have been radiation accidents.
 - Let R = "Red cells pick up oxygen in the lungs."
 - Let T = "Techniques include use."
 - Let D = "Epidemic diseases occur everywhere where there have been radiation accidents."
 - So, $(R \vee T) \vee D$.
6. **Premise 6:** When either red cells pick up oxygen in the lungs or techniques include use is true, it follows that the statement that "People of colour is a race" is incorrect.
 - $(R \vee T) \rightarrow \neg P$.
7. **Premise 7:** Should it be the case that epidemic diseases occur everywhere where there have been radiation accidents, it follows that the statement that "People of colour is a race" is incorrect.
 - $D \rightarrow \neg P$.
8. **Premise 8:** One may reasonably assume that if geraniums lose leaves, then if those that suggest either people of colour is a race or if enemies will have impact, then the notion that nutrition is

the most important issue in the treatment of chylothorax is untrue are wrong, then many processes produce clusters of entities, generated by a small set of self-organizing processes.

- Let G = "Geraniums lose leaves."
- So, $G \rightarrow (\neg[P \vee (E \rightarrow \neg N)] \rightarrow M)$.

9. **Premise 9:** It is a simple truth that geraniums lose leaves.

- G is true.

Statement to Evaluate:

- **Statement:** "Many children have some form of renal disease."
- Let Rn = "Many children have some form of renal disease."

Logical Reasoning:

1. From **Premise 9** and **Premise 8**:
 - G is true.
 - Therefore, $\neg[P \vee (E \rightarrow \neg N)] \rightarrow M$ is true.
2. From **Premise 4**:
 - $\neg[P \vee (E \rightarrow \neg N)] \rightarrow \neg M$.
3. Combining steps 1 and 2:
 - We have both $\neg[P \vee (E \rightarrow \neg N)] \rightarrow M$ and $\neg[P \vee (E \rightarrow \neg N)] \rightarrow \neg M$.
 - This leads to $\neg[P \vee (E \rightarrow \neg N)] \rightarrow (M \wedge \neg M)$, which is a contradiction.
 - Therefore, $\neg[P \vee (E \rightarrow \neg N)]$ must be false.
 - So, $P \vee (E \rightarrow \neg N)$ is true.
4. From **Premise 5**, we have $(R \vee T) \vee D$ is true.
5. From **Premise 6** and **Premise 7**:
 - $(R \vee T) \rightarrow \neg P$.
 - $D \rightarrow \neg P$.
 - Since $(R \vee T) \vee D$ is true, at least one of $\neg P$ must be true.
 - Therefore, $\neg P$ is true.
6. From step 3, since $P \vee (E \rightarrow \neg N)$ is true and P is false ($\neg P$ is true), it must be that $E \rightarrow \neg N$ is true.
7. From **Premise 3** and **Premise 2**:
 - S is true.
 - $S \rightarrow (\neg C \rightarrow E)$.
 - Therefore, $\neg C \rightarrow E$ is true.
8. From **Premise 1**:
 - $\neg C \rightarrow N$ is true.
9. Since $\neg C \rightarrow N$ and $\neg C \rightarrow E$ are both true, we have:
 - $\neg C \rightarrow (N \wedge E)$.
10. Given that $\neg C \rightarrow (N \wedge E)$ and $E \rightarrow \neg N$ (from step 6), we encounter a contradiction when $\neg C$ is true:
 - If $\neg C$ is true, then N and E are true.
 - If E is true, then $\neg N$ is true (from $E \rightarrow \neg N$).
 - Therefore, N is both true and false, which is impossible.
11. Since assuming $\neg C$ is true leads to a contradiction, we must conclude that $\neg C$ is false.
 - Therefore, C is true.

- So, "Children are especially vulnerable because their lungs are still developing" is true.
12. However, none of the premises mention anything about "Many children have some form of renal disease" (Rn).

Conclusion:

- The premises do not provide any information about renal disease in children.
- There is no logical connection established between the premises and the statement Rn .
- Therefore, based solely on the given premises, we cannot determine the truth value of the statement.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
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You must answer with either one of the 3 options:

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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually

markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false. Therefore, the final answer is FALSE.

Paragraph: It is a common misconception that cool stars are red or reddish-orange in color. Either Mexican coffees are wet-processed or anger is a powerful tool for social change on a personal and societal level. If anger is a powerful tool for social change on a personal and societal level, then if water shortages pose problems, then cool stars are red or reddish-orange in color. Should it be the case that spectral lines are produced by transitions of electrons within atoms or ions, it follows that either steamrollers have (part) sections or if Mexican coffees are wet-processed, then if water shortages pose problems, then cool stars are red or reddish-orange in color. It is a fact that either bats can hear from thirty thousand to seventy thousand vibrations per second or the statement 'steamrollers have (part) sections' can be considered false. It is not the case that bats can hear from thirty thousand to seventy thousand vibrations per second. One may reasonably assume that if the notion that 'spectral lines are produced by transitions of electrons within atoms or ions' is untrue, then the statement that states cVs can also exhibit outbursts on the time scale of weeks to months is false. When the claim that if the notion that 'spectral lines are produced by transitions of electrons within atoms or ions' is untrue, then cVs can also exhibit outbursts on the time scale of weeks to months is false is true, it follows that either exercise physiology demonstrates the extremes of physiological stress or more children die from preventable injury than from all childhood diseases combined. The statement 'either exercise physiology demonstrates the extremes of physiological stress or more children die from preventable injury than from all childhood diseases combined' can be considered false.

Statement: The notion that 'water shortages pose problems' is untrue.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** It is a common misconception that cool stars are red or reddish-orange in color.
 - Let S : "Cool stars are red or reddish-orange in color."
 - Since it's a misconception, S is false.
 - Therefore, $\neg S$ is true.
2. **Premise 2:** Either Mexican coffees are wet-processed or anger is a powerful tool for social change on a personal and societal level.
 - Let M : "Mexican coffees are wet-processed."
 - Let A : "Anger is a powerful tool for social change on a personal and societal level."
 - Symbolically: $M \vee A$
3. **Premise 3:** If anger is a powerful tool for social change on a personal and societal level, then if water shortages pose problems, then cool stars are red or reddish-orange in color.
 - Let W : "Water shortages pose problems."
 - Symbolically: $A \rightarrow (W \rightarrow S)$

4. **Premise 4:** Should it be the case that spectral lines are produced by transitions of electrons within atoms or ions, it follows that either steamrollers have (part) sections or if Mexican coffees are wet-processed, then if water shortages pose problems, then cool stars are red or reddish-orange in color.
 - Let P : "Spectral lines are produced by transitions of electrons within atoms or ions."
 - Let R : "Steamrollers have (part) sections."
 - Symbolically: $P \rightarrow [R \vee (M \rightarrow (W \rightarrow S))]$
5. **Premise 5:** It is a fact that either bats can hear from thirty thousand to seventy thousand vibrations per second or the statement "steamrollers have (part) sections" can be considered false.
 - Let B : "Bats can hear from thirty thousand to seventy thousand vibrations per second."
 - Symbolically: $B \vee \neg R$
6. **Premise 6:** It is not the case that bats can hear from thirty thousand to seventy thousand vibrations per second.
 - Therefore, $\neg B$ is true.
7. **Premise 7:** One may reasonably assume that if the notion that "spectral lines are produced by transitions of electrons within atoms or ions" is untrue, then the statement that states CVs can also exhibit outbursts on the time scale of weeks to months is false.
 - Let Q : "CVs can also exhibit outbursts on the time scale of weeks to months."
 - Since the notion that P is untrue is $\neg P$, the statement is $\neg P \rightarrow \neg Q$
8. **Premise 8:** When the claim that "if the notion that P is untrue, then Q is false" is true, it follows that either exercise physiology demonstrates the extremes of physiological stress or more children die from preventable injury than from all childhood diseases combined.
 - Let E : "Exercise physiology demonstrates the extremes of physiological stress."
 - Let F : "More children die from preventable injury than from all childhood diseases combined."
 - The claim is $\neg[\neg P \rightarrow \neg Q]$
 - Symbolically: $\neg[\neg P \rightarrow \neg Q] \rightarrow (E \vee F)$
9. **Premise 9:** The statement "either exercise physiology demonstrates the extremes of physiological stress or more children die from preventable injury than from all childhood diseases combined" can be considered false.
 - Therefore, $\neg(E \vee F)$ is true.

Statement to Evaluate:

- **Statement:** The notion that "water shortages pose problems" is untrue.
- Symbolically: $\neg W$

Logical Reasoning:

1. **From Premise 6 and Premise 5:**
 - $\neg B$ is true.
 - $B \vee \neg R$ is true.
 - Since B is false ($\neg B$ is true), by **Disjunctive Syllogism**, $\neg R$ must be true.
 - Therefore, R is false.
2. **From Premise 4:**
 - $P \rightarrow [R \vee (M \rightarrow (W \rightarrow S))]$

- Since R is false, $R \vee (M \rightarrow (W \rightarrow S))$ simplifies to $M \rightarrow (W \rightarrow S)$.
- Therefore, $P \rightarrow (M \rightarrow (W \rightarrow S))$

3. From Premise 2:

- $M \vee A$ is true.

4. Case Analysis:

- **Case 1:** Assume P is true.
 - From step 2, $P \rightarrow (M \rightarrow (W \rightarrow S))$
 - Since P is true, by **Modus Ponens**, $M \rightarrow (W \rightarrow S)$ is true.
 - **Subcase 1a:** M is true.
 - $M \rightarrow (W \rightarrow S)$ is true.
 - By **Modus Ponens**, $W \rightarrow S$ is true.
 - **Subcase 1b:** M is false.
 - From $M \vee A$ and $\neg M$, A must be true.
 - From Premise 3, $A \rightarrow (W \rightarrow S)$
 - Since A is true, by **Modus Ponens**, $W \rightarrow S$ is true.
 - In both subcases, $W \rightarrow S$ is true.
 - From Premise 1, $\neg S$ is true.
 - Using **Modus Tollens** on $W \rightarrow S$ and $\neg S$, we conclude $\neg W$ is true.
- **Case 2:** Assume P is false ($\neg P$ is true).
 - From Premise 7, $\neg P \rightarrow \neg Q$ is true.
 - Since $\neg P$ is true, by **Modus Ponens**, $\neg Q$ is true.
 - From Premise 8, $\neg[\neg P \rightarrow \neg Q] \rightarrow (E \vee F)$
 - Since $\neg[\neg P \rightarrow \neg Q]$ is false (because $\neg P \rightarrow \neg Q$ is true), the antecedent is false.
 - Therefore, we cannot conclude $E \vee F$ from Premise 8.
 - From Premise 9, $\neg(E \vee F)$ is true, but this does not affect our conclusion about W .
 - In this case, we have no information to determine the truth value of W .

5. Conclusion:

- In **Case 1**, we concluded $\neg W$ is true.
- In **Case 2**, we cannot determine the truth value of W .
- Since we cannot definitively conclude that $\neg W$ is true in all cases based on the given premises, we cannot assert the truth of the statement.

Final Answer: UNCERTAIN



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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or

power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Either one or both of these statements are true: direct effects are the expenditures and jobs created by an industry within a county, or some materials use for insulation. Assuming direct effects are the expenditures and jobs created by an industry within a county, we know that either dolphins are very intelligent animals but are also very curious or plasmids replicate by a similar process. One may reasonably assume that if some materials use for insulation, then either dolphins are very intelligent animals but are also very curious or plasmids replicate by a similar process.

Statement: The claim that either dolphins are very intelligent animals but are also very curious or plasmids replicate by a similar process has no merit.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Either one or both of these statements are true:

- A : "Direct effects are the expenditures and jobs created by an industry within a county."
- B : "Some materials are used for insulation."
- Symbolically: $A \vee B$
- 2. **Premise 2:** Assuming A is true, we know that either dolphins are very intelligent animals but are also very curious, or plasmids replicate by a similar process.
 - C : "Dolphins are very intelligent animals but are also very curious."
 - D : "Plasmids replicate by a similar process."
 - Symbolically: $A \rightarrow (C \vee D)$
- 3. **Premise 3:** One may reasonably assume that if B is true, then either C or D is true.
 - Symbolically: $B \rightarrow (C \vee D)$

Statement to Evaluate:

- "The claim that either dolphins are very intelligent animals but are also very curious or plasmids replicate by a similar process has no merit."
- Symbolically: $\neg(C \vee D)$

Logical Reasoning:

1. **From Premise 1:**
 - $A \vee B$ is true.
2. **From Premise 2 and Premise 3:**
 - $A \rightarrow (C \vee D)$ is true.
 - $B \rightarrow (C \vee D)$ is true.
3. **Since $A \vee B$ is true**, we consider two cases:
 - **Case 1:** A is true.
 - From $A \rightarrow (C \vee D)$ and A is true, by **Modus Ponens**, $C \vee D$ is true.
 - **Case 2:** B is true.
 - From $B \rightarrow (C \vee D)$ and B is true, by **Modus Ponens**, $C \vee D$ is true.
4. **Conclusion from both cases:**
 - In both cases, $C \vee D$ is true.
5. **Assessing the Statement:**
 - The statement claims that $\neg(C \vee D)$ is true (that the claim $C \vee D$ has no merit).
 - Since $C \vee D$ is true based on the premises, the claim $\neg(C \vee D)$ is false.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum

- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Given that teachers use analyses, it can be inferred that crowds are the largest groups and least personal of adolescent groups. Many people rightly believe that teachers use analyses.

Statement: Those that suggest crowds are the largest groups and least personal of adolescent groups are right.

Answer:



Premise 1: Given that teachers use analyses, it can be inferred that crowds are the largest groups and least personal of adolescent groups.

- Symbolically: $T \rightarrow C$
 - Where:
 - T : Teachers use analyses.

- C : Crowds are the largest and least personal adolescent groups.

Premise 2: Many people rightly believe that teachers use analyses.

- This means T is true.

Logical Reasoning:

1. From **Premise 2**, T is true.
2. From **Premise 1**, $T \rightarrow C$ is true.
3. Applying **Modus Ponens**:
 - Since T is true and $T \rightarrow C$ is true, we conclude that C is true.

Conclusion:

- The statement is: "Those that suggest crowds are the largest groups and least personal of adolescent groups are right."
- Since C is true, those who suggest C are indeed correct.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

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- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their

peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Once we know true intimacy requires a free and honest responsible sharing of feelings, thoughts and needs, we also know that either nun isa person or researchers observe levels. The claim that true intimacy requires a free and honest responsible sharing of feelings, thoughts and needs holds true.

Statement: There is good reason to believe that either nuns have (part) cell membranes or some researchers indicate that one out of five young people have had sex by the age of thirteen.

Answer:



Premise 1: Once we know that "True intimacy requires a free and honest responsible sharing of feelings, thoughts, and needs" (T), we also know that either "nun is a person" (N) or "researchers observe levels" (R).

- Symbolically: $T \rightarrow (N \vee R)$

Premise 2: The claim that "True intimacy requires a free and honest responsible sharing of feelings, thoughts, and needs" holds true.

- Therefore, T is true.

Logical Reasoning:

1. From Premise 2:

- T is true.

2. From Premise 1 and the truth of T :

- Using **Modus Ponens** on $T \rightarrow (N \vee R)$ with T true, we conclude:
 - $N \vee R$ is true.

3. Connecting N and M :

- N : "Nun is a person."
- M : "Nuns have (part) cell membranes."
- Since all persons have cell membranes (as they are made up of cells), and nuns are persons, it follows that:

- $N \rightarrow M$

4. Connecting R and S :

- R : "Researchers observe levels."
- S : "Some researchers indicate that one out of five young people have had sex by the age of thirteen."
- While R implies that researchers are observing data, without specific information, we cannot definitively state $R \rightarrow S$.
- Therefore, we focus on the connection between N and M .

5. Using $N \rightarrow M$:

- Since $N \vee R$ is true (from step 2) and $N \rightarrow M$ is true (from step 3), we can infer that:
 - If N is true, then M is true.
 - Therefore, $N \vee R$ implies $M \vee R$ is true.

6. Conclusion:

- Since $M \vee R$ is true and $M \vee S$ is the statement we are evaluating, and we have established M is true if N is true, we can conclude:
 - $M \vee S$ is true.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

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- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
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- Disjunction Elimination

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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their

peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: The statement that 'plants require much moisture, grow rapidly, and are often highly productive' is incorrect. It is rational to believe that either fish are cold-blooded animals, their metabolism is controlled by the water temperature or if diseases can spread from salmon in the crowded pens to wild salmon, then selfish living is destructive to harmony. Whenever it is true that fish are cold-blooded animals, their metabolism is controlled by the water temperature, 'if some birds use tools to assist their feeding activities, then plants require much moisture, grow rapidly, and are often highly productive' is true. Given that if diseases can spread from salmon in the crowded pens to wild salmon, then selfish living is destructive to harmony, it can be inferred that if some birds use tools to assist their feeding activities, then plants require much moisture, grow rapidly, and are often highly productive.

Statement: The statement, some birds use tools to assist their feeding activities, does not hold.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** The statement that "Plants require much moisture, grow rapidly, and are often highly productive" is incorrect.
 - Let P : "Plants require much moisture, grow rapidly, and are often highly productive."
 - Therefore, $\neg P$ is true.
2. **Premise 2:** It is rational to believe that either fish are cold-blooded animals, their metabolism is controlled by the water temperature (F), or if diseases can spread from salmon in crowded pens to wild salmon (D), then selfish living is destructive to harmony (S).
 - Symbolically: $F \vee (D \rightarrow S)$
3. **Premise 3:** Whenever F is true, "If some birds use tools to assist their feeding activities (B), then P " is true.
 - Symbolically: $F \rightarrow (B \rightarrow P)$
4. **Premise 4:** Given that $D \rightarrow S$, it can be inferred that $B \rightarrow P$.
 - Symbolically: $(D \rightarrow S) \rightarrow (B \rightarrow P)$

Statement to Evaluate:

- "The statement, some birds use tools to assist their feeding activities, does not hold."
- Symbolically: $\neg B$

Logical Reasoning:

1. From Premise 1:

- $\neg P$ is true.

2. Case Analysis Based on Premise 2:

- Premise 2 states $F \vee (D \rightarrow S)$.

Case 1: Assume F is true.

- From Premise 3: $F \rightarrow (B \rightarrow P)$.
- Since F is true, by **Modus Ponens**, $B \rightarrow P$ is true.
- We know $\neg P$ is true (from Premise 1), so P is false.
- The implication $B \rightarrow P$ is true, and P is false.
- The only way $B \rightarrow P$ is true when P is false is if B is false.
 - If B were true, $B \rightarrow P$ would be false (contradicts our conclusion).
- Therefore, $\neg B$ is true.

Case 2: Assume F is false.

- Then from Premise 2, $D \rightarrow S$ must be true.
- From Premise 4: $(D \rightarrow S) \rightarrow (B \rightarrow P)$.
- Since $D \rightarrow S$ is true, by **Modus Ponens**, $B \rightarrow P$ is true.
- Again, $\neg P$ is true.
- As before, the only way $B \rightarrow P$ is true when P is false is if B is false.
- Therefore, $\neg B$ is true.

3. Conclusion:

- In both cases, $\neg B$ is true.
- Therefore, the statement "Some birds use tools to assist their feeding activities does not hold" is **TRUE**.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement

- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude

that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.
Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: On the condition that the statement that 'eternity is an existence without beginning or end' is incorrect, it is definitely the case that oysters prefer low salinity water. It is rational to believe that either social graces are character traits that have to do with our attitude toward other people or the claim that oysters prefer low salinity water does not correspond with reality. The claim that social graces are character traits that have to do with our attitude toward other people does not correspond with reality.

Statement: It is a common misconception that eternity is an existence without beginning or end.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** On the condition that the statement that "Eternity is an existence without beginning or end" is incorrect, it is definitely the case that oysters prefer low salinity water.
 - Let E : "Eternity is an existence without beginning or end."
 - Let O : "Oysters prefer low salinity water."
 - Symbolically: $\neg E \rightarrow O$
2. **Premise 2:** It is rational to believe that either social graces are character traits that have to do with our attitude toward other people, or the claim that oysters prefer low salinity water does

not correspond with reality.

- Let S : "Social graces are character traits that have to do with our attitude toward other people."
- Symbolically: $S \vee \neg O$

3. **Premise 3:** The claim that social graces are character traits that have to do with our attitude toward other people does not correspond with reality.

- Therefore, $\neg S$ is true.

Statement to Evaluate:

- "It is a common misconception that eternity is an existence without beginning or end."
 - This implies that E is false (since it's a misconception), so $\neg E$ is true.

Logical Reasoning:

1. **From Premise 3:**

- $\neg S$ is true.

2. **From Premise 2:**

- $S \vee \neg O$ is true.
- Since $\neg S$ is true (meaning S is false), for the disjunction $S \vee \neg O$ to be true, $\neg O$ must be true.
- Therefore, $\neg O$ is true.

3. **Conclusion:**

- $\neg O$ is true, so O is false.

4. **Contrapositive of Premise 1:**

- Original Premise 1: $\neg E \rightarrow O$
- Contrapositive: $\neg O \rightarrow E$

5. **Applying Modus Ponens:**

- $\neg O$ is true (from step 3).
- $\neg O \rightarrow E$ (from the contrapositive).
- Therefore, E is true.

6. **Assessing the Statement:**

- The statement claims that $\neg E$ is true ("It is a common misconception that E ").
- We have established that E is true.
- Therefore, $\neg E$ is false.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism

- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use

tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Provided that numbers can be organic, we know that alternative medicine is used alone, without recommended standard treatment. Given that those that suggest if calves develop jaws, then numbers can be organic are wrong, it can be inferred that china is the leading contributor to world fisheries production. Should it be the case that those that suggest if calves develop jaws, then numbers can be organic are wrong, it follows that those that suggest china is the leading contributor to world fisheries production are wrong.

Statement: Should it be the case that calves are more susceptible to the effects of aflatoxin than adult cattle, it follows that alternative medicine is used alone, without recommended standard treatment.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Provided that numbers can be organic, we know that alternative medicine is used alone, without recommended standard treatment.
 - Let:
 - N : Numbers can be organic.
 - A : Alternative medicine is used alone, without recommended standard treatment.
 - Symbolically: $N \rightarrow A$
2. **Premise 2:** Given that those that suggest "if calves develop jaws, then numbers can be organic" are wrong, it can be inferred that China is the leading contributor to world fisheries production.
 - Let:
 - C : Calves develop jaws.
 - $S1$: Those who suggest $(C \rightarrow N)$ are wrong.
 - W : China is the leading contributor to world fisheries production.
 - Symbolically: $S1 \rightarrow W$
3. **Premise 3:** Should it be the case that those that suggest $(C \rightarrow N)$ are wrong ($S1$), it follows that those that suggest W are wrong ($S2$).
 - Let:
 - $S2$: Those who suggest W are wrong.
 - Symbolically: $S1 \rightarrow S2$

Statement to Evaluate:

- "Should it be the case that calves are more susceptible to the effects of aflatoxin than adult cattle, it follows that alternative medicine is used alone, without recommended standard treatment."
 - Let:
 - K : Calves are more susceptible to the effects of aflatoxin than adult cattle.
 - Symbolically: $K \rightarrow A$

Logical Reasoning:

1. **From Premise 1:**
 - $N \rightarrow A$
2. **From Premise 2 and 3:**
 - $S1 \rightarrow W$
 - $S1 \rightarrow S2$
3. **Understanding $S1$ and $S2$:**
 - $S1$: The assertion that $C \rightarrow N$ is false.
 - This means $\neg(C \rightarrow N)$, which is equivalent to $C \wedge \neg N$.
 - $S2$: The assertion that W is false.
4. **Deriving from $S1$:**
 - Since $S1$ is $C \wedge \neg N$, we have:
 - C is true.
 - N is false.
5. **From $N \rightarrow A$ and $\neg N$:**
 - $N \rightarrow A$ (Premise 1)
 - N is false ($\neg N$)

- We cannot apply **Modus Ponens** or **Modus Tollens** to conclude anything about A directly, since N is false.

6. Connecting K to the Premises:

- K (calves are more susceptible to aflatoxin) is not mentioned or connected in any of the premises.
- There is no information provided that links K to A or any other variables.

7. Conclusion:

- Based on the given premises, we cannot determine the truth value of the statement $K \rightarrow A$.
- There is insufficient information to conclude whether the statement is true or false.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.
Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Provided that vapors cause irritation of nose , we know that the statement 'if some people use adaptive technology with their computer to access the web, then cigarette butts can cause bushfires' can be considered false. We know that either interannual variability is prominent near the equator or either vapors cause irritation of nose or estuaries are transitional zones that encompass a wide variety of environments. The notion that 'interannual variability is prominent near the equator' is untrue. Whenever it is true that either hepaticas are usually the first woodland wildflowers to bloom in the spring or male ducks are generally more brightly colored than the females, 'if estuaries are transitional zones that encompass a wide variety of environments, then the statement 'if some people use adaptive technology with their computer to access the web, then cigarette butts can cause bushfires' can be considered false' is true. At least one of two things is true: hepaticas are usually the first woodland wildflowers to bloom in the spring, or male ducks are generally more brightly colored than the females.

Statement: The notion that 'some people also experience a healing reaction, such as headaches, cold or flu-like symptoms' is untrue.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Provided that vapors cause irritation of nose, we know that the statement "If some people use adaptive technology with their computer to access the web, then cigarette butts can cause bushfires" can be considered false.
 - Let:
 - V : Vapors cause irritation of nose.
 - S : The statement "If some people use adaptive technology with their computer to access the web, then cigarette butts can cause bushfires" can be considered false.
 - Symbolically: $V \rightarrow S$
2. **Premise 2:** We know that either interannual variability is prominent near the equator, or vapors cause irritation of nose, or estuaries are transitional zones that encompass a wide variety of environments.
 - Let:
 - I : Interannual variability is prominent near the equator.
 - V : Vapors cause irritation of nose.
 - E : Estuaries are transitional zones that encompass a wide variety of environments.
 - Symbolically: $I \vee V \vee E$
3. **Premise 3:** The notion that "Interannual variability is prominent near the equator" is untrue.
 - Therefore, $\neg I$ is true.

4. **Premise 4:** Whenever it is true that either hepaticas are usually the first woodland wildflowers to bloom in the spring or male ducks are generally more brightly colored than the females, "If estuaries are transitional zones that encompass a wide variety of environments, then S " is true.

- Let:
 - H : Hepaticas are usually the first woodland wildflowers to bloom in the spring.
 - M : Male ducks are generally more brightly colored than the females.
 - S : As defined above.
 - E : As defined above.
- Symbolically: $(H \vee M) \rightarrow (E \rightarrow S)$

5. **Premise 5:** At least one of two things is true: H or M .

- Symbolically: $H \vee M$

Statement to Evaluate:

- The notion that "Some people also experience a healing reaction, such as headaches, cold or flu-like symptoms" is untrue.
 - Let:
 - P : "Some people also experience a healing reaction, such as headaches, cold or flu-like symptoms."
 - So the statement is $\neg P$.

Logical Reasoning:

1. From Premise 3:

- $\neg I$ is true.

2. From Premise 2:

- $I \vee V \vee E$ is true.
- Since I is false ($\neg I$ is true), the disjunction simplifies to $V \vee E$.

3. Case Analysis:

Case 1: V is true.

- From Premise 1: $V \rightarrow S$
- Since V is true, using **Modus Ponens**, S is true.

Case 2: E is true.

- From Premise 5: $H \vee M$ is true.
- From Premise 4: $(H \vee M) \rightarrow (E \rightarrow S)$
- Since $H \vee M$ is true, $E \rightarrow S$ is true.
- Given E is true, using **Modus Ponens**, S is true.

4. Conclusion from Both Cases:

- In both cases, S is true.

5. Analyzing S :

- S : The statement "If some people use adaptive technology with their computer to access the web, then cigarette butts can cause bushfires" can be considered false.
- This means S asserts that the implication $A \rightarrow B$ is false, where:
 - A : "Some people use adaptive technology with their computer to access the web."
 - B : "Cigarette butts can cause bushfires."
- So, S implies $\neg(A \rightarrow B)$, which is equivalent to $A \wedge \neg B$.

6. From S , We Have:

- A is true: Some people use adaptive technology with their computer to access the web.
- $\neg B$ is true: Cigarette butts cannot cause bushfires.

7. Assessing the Statement:

- The statement to evaluate involves P : "Some people also experience a healing reaction, such as headaches, cold or flu-like symptoms."
- There is no connection in the premises between P and any of the established variables (V, S, A, B, E, H, M).
- Therefore, based solely on the given premises, we cannot determine the truth value of P or $\neg P$.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

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You must answer with either one of the 3 options:

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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually

markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false. Therefore, the final answer is FALSE.

Paragraph: Provided that the notion that 'if it is a common misconception that either most people feel anxious at some time in life or maps are located in classrooms, then nitric oxide protects the heart, stimulates the brain, and kills bacteria' is untrue, we know that if woodchucks have tails, then many teachers work years. The claim that if woodchucks have tails, then many teachers work years does not correspond with reality. Either alcohol is absorbed and eliminated over time or either early diagnosis is important in order to save the tooth or bible prophets speak of things beyond human foresight and human wisdom. Provided that alcohol is absorbed and eliminated over time, we know that if it is a common misconception that either most people feel anxious at some time in life or maps are located in classrooms, then some people mistakenly believe that nitric oxide protects the heart, stimulates the brain, and kills bacteria. Given that either early diagnosis is important in order to save the tooth or bible prophets speak of things beyond human foresight and human wisdom, it can be inferred that if it is a common misconception that either most people feel anxious at some time in life or maps are located in classrooms, then some people mistakenly believe that nitric oxide protects the heart, stimulates the brain, and kills bacteria.

Statement: The claim that either most people feel anxious at some time in life or maps are located in classrooms is false.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Provided that the notion that "If it is a common misconception that either most people feel anxious at some time in life or maps are located in classrooms (P), then nitric oxide protects the heart, stimulates the brain, and kills bacteria (Q)" is untrue, we know that "If woodchucks have tails (R), then many teachers work years (S)".
 - The notion that $P \rightarrow Q$ is untrue: $\neg(P \rightarrow Q)$
 - Therefore: $\neg(P \rightarrow Q) \rightarrow (R \rightarrow S)$
2. **Premise 2:** The claim that "If woodchucks have tails, then many teachers work years" does not correspond with reality.
 - $R \rightarrow S$ is false: $\neg(R \rightarrow S)$
3. **Premise 3:** Either alcohol is absorbed and eliminated over time (A), or early diagnosis is important in order to save the tooth (D), or bible prophets speak of things beyond human foresight and human wisdom (B).
 - Symbolically: $A \vee D \vee B$
4. **Premise 4:** Provided that A is true, we know that "If it is a common misconception that either most people feel anxious at some time in life or maps are located in classrooms (P), then some people mistakenly believe that nitric oxide protects the heart, stimulates the brain, and kills bacteria (E)".

- $A \rightarrow (P \rightarrow E)$

5. **Premise 5:** Given that $D \vee B$ is true, it can be inferred that "If it is a common misconception that P , then some people mistakenly believe that nitric oxide protects the heart, stimulates the brain, and kills bacteria".

- $(D \vee B) \rightarrow (P \rightarrow E)$

Statement to Evaluate:

- "The claim that either most people feel anxious at some time in life or maps are located in classrooms is false."
 - P' : "Most people feel anxious at some time in life."
 - P'' : "Maps are located in classrooms."
 - The statement claims $\neg(P' \vee P'')$

Logical Reasoning:

1. From **Premise 2**, $\neg(R \rightarrow S)$ is true.
2. From **Premise 1**:
 - $\neg(P \rightarrow Q) \rightarrow (R \rightarrow S)$
 - Since $\neg(R \rightarrow S)$ is true, by **Modus Tollens**, we have:
 - $\neg(P \rightarrow Q) \rightarrow (R \rightarrow S)$
 - $\neg(R \rightarrow S)$ is true.
 - Therefore, $\neg\neg(P \rightarrow Q)$ is true.
 - Simplifies to $P \rightarrow Q$ is true.
3. From **Premise 3**, $A \vee D \vee B$ is true.
4. There are two cases based on **Premise 3**:
 - **Case 1:** A is true.
 - From **Premise 4:** $A \rightarrow (P \rightarrow E)$
 - Using **Modus Ponens**, $P \rightarrow E$ is true.
 - **Case 2:** $D \vee B$ is true.
 - From **Premise 5:** $(D \vee B) \rightarrow (P \rightarrow E)$
 - Using **Modus Ponens**, $P \rightarrow E$ is true.
5. In both cases, $P \rightarrow E$ is true.
6. From step 2, $P \rightarrow Q$ is true.
7. However, we have no premises that provide information about the truth values of P' and P'' individually or collectively.
8. Since P is about the misconception of $P' \vee P''$, and $P \rightarrow Q$ is true, but we cannot determine the truth value of P itself or $P' \vee P''$.
9. Therefore, we cannot conclude whether $\neg(P' \vee P'')$ is true or false based on the given premises.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

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- Modus Tollens
- Hypothetical Syllogism
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You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
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- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if

power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: One may reasonably assume that if it is not true that if people can transmit the infection after handling sick or dead birds, then the claim that plots are charts does not reflect reality, then angels are prettier and happier when they smile with their heart. It is not true that angels are prettier and happier when they smile with their heart. Once we know social status has significant effects on daffodil cichlid behavior, we also know that people can transmit the infection after handling sick or dead birds. The claim that social status has significant effects on daffodil cichlid behavior holds true.

Statement: The claim that plots are charts does not reflect reality.

Answer:



Premise 1: One may reasonably assume that if it is not true that if people can transmit the infection after handling sick or dead birds ($P \rightarrow Q$), then angels are prettier and happier when they smile with their heart (R).

- Symbolically: $\neg(P \rightarrow Q) \rightarrow R$

Premise 2: It is not true that angels are prettier and happier when they smile with their heart.

- Symbolically: $\neg R$

Premise 3: Once we know social status has significant effects on daffodil cichlid behavior (S), we also know that people can transmit the infection after handling sick or dead birds.

- Symbolically: $S \rightarrow P$

Premise 4: The claim that social status has significant effects on daffodil cichlid behavior holds true.

- Therefore, S is true.

Logical Reasoning:

1. From **Premise 4**, S is true.
2. From **Premise 3** and S being true:
 - $S \rightarrow P$ is true.
 - By **Modus Ponens**, P is true.
3. From **Premise 2**, $\neg R$ is true.
4. From **Premise 1**:
 - $\neg(P \rightarrow Q) \rightarrow R$ is true.
 - Since $\neg R$ is true, the antecedent $\neg(P \rightarrow Q)$ must be false (by **Modus Tollens**).
 - Therefore, $\neg(P \rightarrow Q)$ is false.
 - This means $P \rightarrow Q$ is true.
5. Since $P \rightarrow Q$ is true and P is true (from step 2):
 - By **Modus Ponens**, Q is true.

Conclusion:

- Q represents: "The claim that plots are charts does not reflect reality."
- Since Q is true, the statement is **TRUE**.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Those that suggest some porpoises wash up on beaches are wrong. On the condition that we know that the claim that if the statement 'ice skating is probably one of the healthiest forms of exercise' can be considered false, then we know that the claim that ironworkers use safety belts, scaffolding, and nets to reduce the risk of falls is false is false, it is definitely the case that food supplies the substances that help regulate the body's processes. The notion that 'food supplies the substances that help regulate the body's processes' is untrue. So long as the notion that 'if the statement 'ice skating is probably one of the healthiest forms of exercise' can be

considered false, then ironworkers use safety belts, scaffolding, and nets to reduce the risk of falls' is untrue, 'neurons are somatic cells' is true. Assuming neurons are somatic cells, we know that some porpoises wash up on beaches.

Statement: Ice skating is a new and innovative idea that has been around for centuries.

Answer:



Premise 1: Those that suggest some porpoises wash up on beaches are wrong.

- Let P : "Some porpoises wash up on beaches."
- Since those who suggest P are wrong, P is false.
- Therefore, $\neg P$ is true.

Premise 2: On the condition that we know that the claim that if the statement "Ice skating is probably one of the healthiest forms of exercise" can be considered false, then we know that the claim that ironworkers use safety belts, scaffolding, and nets to reduce the risk of falls is false is false, it is definitely the case that food supplies the substances that help regulate the body's processes.

- Let I : "The statement 'Ice skating is probably one of the healthiest forms of exercise' can be considered false."
- Let F : "The claim that ironworkers use safety belts, scaffolding, and nets to reduce the risk of falls is false."
- Let E : "Food supplies the substances that help regulate the body's processes."
- The complex statement simplifies to:
 - If $\neg[\neg(I \rightarrow F)]$ is true, then E is true.
 - Simplifying $\neg[\neg(I \rightarrow F)]$ gives $I \rightarrow F$.
- So, the premise becomes:
 - If $I \rightarrow F$ is true, then E is true.
 - Symbolically: $(I \rightarrow F) \rightarrow E$

Premise 3: The notion that "Food supplies the substances that help regulate the body's processes" is untrue.

- Therefore, $\neg E$ is true.

Premise 4: So long as the notion that "If the statement 'Ice skating is probably one of the healthiest forms of exercise' can be considered false, then ironworkers use safety belts, scaffolding, and nets to reduce the risk of falls" is untrue, "Neurons are somatic cells" is true.

- This translates to:
 - If $\neg(I \rightarrow F)$ is true, then N is true.
 - Let N : "Neurons are somatic cells."
- Symbolically: $\neg(I \rightarrow F) \rightarrow N$

Premise 5: Assuming neurons are somatic cells, we know that some porpoises wash up on beaches.

- Since N implies P :

- $N \rightarrow P$

Logical Reasoning:

1. From Premise 3 and Premise 2:

- $(I \rightarrow F) \rightarrow E$ is true.
- $\neg E$ is true.
- Using **Modus Tollens** on $(I \rightarrow F) \rightarrow E$ and $\neg E$, we conclude $\neg(I \rightarrow F)$ is true.

2. From Step 1 and Premise 4:

- $\neg(I \rightarrow F) \rightarrow N$ is true.
- $\neg(I \rightarrow F)$ is true (from Step 1).
- Using **Modus Ponens**, we deduce N is true.

3. From Premise 5 and Step 2:

- $N \rightarrow P$ is true.
- N is true.
- Using **Modus Ponens**, we conclude P is true.

4. Contradiction:

- From Premise 1, $\neg P$ is true.
- From Step 3, P is true.
- This is a contradiction: P cannot be both true and false.

5. Analyzing the Contradiction:

- The contradiction suggests an inconsistency in the premises.
- Since all premises are assumed true, the contradiction indicates that our initial assumptions lead to an impossible conclusion.
- However, the statement to evaluate is unrelated to P or the contradiction directly.

Assessing the Statement:

- **Statement:** "Ice skating is a new and innovative idea that has been around for centuries."
- This statement (K) is not directly connected to any of the propositions (I, F, E, N, P) in the premises.
- The premises involve the truth values of I and F , but they do not provide information about K .
- There is no logical pathway from the premises to determine the truth value of K .

Conclusion:

- Based solely on the given premises, we cannot determine whether the statement K is true or false.
- The premises neither support nor contradict the statement.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens

- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
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- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or

cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: We know that at least one of two things is true: most jasmine has dark foliage, or ZIP is a compression and archiving format that makes downloading files faster and easier. One may reasonably assume that if ZIP is a compression and archiving format that makes downloading files faster and easier, then kopi means coffee in English. When seaweed is marine organisms is true, it follows that kopi means coffee in English. There is good reason to believe that either dolphins do back flips and dolphins always play basketball or some mallards float in ponds. Whenever it is true that some mallards float in ponds, 'if most jasmine has dark foliage, then seaweed is marine organisms' is true. So long as dolphins do back flips and dolphins always play basketball, 'asexual reproduction is common in higher groups of organisms iv' is true. Provided that asexual reproduction is common in higher groups of organisms iv, we know that if most jasmine has dark foliage, then seaweed is marine organisms.

Statement: It is fair to say that kopi means coffee in English.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** At least one of two things is true:
 - J : "Most jasmine has dark foliage."
 - Z : "ZIP is a compression and archiving format that makes downloading files faster and easier."
 - Symbolically: $J \vee Z$
2. **Premise 2:** If Z is true, then "Copi means coffee in English."
 - C : "Copi means coffee in English."
 - Symbolically: $Z \rightarrow C$
3. **Premise 3:** When "Seaweed is marine organisms" is true, it follows that C is true.
 - S : "Seaweed is marine organisms."
 - Symbolically: $S \rightarrow C$
4. **Premise 4:** There is good reason to believe that either:
 - D : "Dolphins do back flips and dolphins always play basketball."
 - M : "Some mallards float in ponds."
 - Symbolically: $D \vee M$
5. **Premise 5:** Whenever M is true, "If J is true, then S is true."
 - Symbolically: $M \rightarrow (J \rightarrow S)$
6. **Premise 6:** So long as D is true, "Asexual reproduction is common in higher groups of organisms iv" is true.
 - A : "Asexual reproduction is common in higher groups of organisms iv."
 - Symbolically: $D \rightarrow A$
7. **Premise 7:** Provided that A is true, "If J is true, then S is true."
 - Symbolically: $A \rightarrow (J \rightarrow S)$

Logical Reasoning:

We need to determine the truth value of C : "Copi means coffee in English."

Case Analysis Based on Premise 1 ($J \vee Z$):

Case 1: Assume Z is true.

- From Premise 2: $Z \rightarrow C$.
- Since Z is true, by **Modus Ponens**, C is true.

Case 2: Assume J is true.

- From Premise 4: $D \vee M$.
- We consider two subcases:
 - Subcase 2a:** M is true.
 - From Premise 5: $M \rightarrow (J \rightarrow S)$.
 - Since M is true, $J \rightarrow S$ is true.
 - Since J is true, by **Modus Ponens**, S is true.

- From Premise 3: $S \rightarrow C$.
- Since S is true, by **Modus Ponens**, C is true.

Subcase 2b: D is true.

- From Premise 6: $D \rightarrow A$.
- Since D is true, A is true.
- From Premise 7: $A \rightarrow (J \rightarrow S)$.
- Since A is true, $J \rightarrow S$ is true.
- Since J is true, by **Modus Ponens**, S is true.
- From Premise 3: $S \rightarrow C$.
- Since S is true, by **Modus Ponens**, C is true.

In all scenarios, C ("Copi means coffee in English") is concluded to be true.

Conclusion:

Based on the premises, we deduce that "Copi means coffee in English" is true.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: One may reasonably assume that if indentations are space, then a facial is a beauty treatment. We know that at least one of two things is true: soccer is a football, or many Internet companies use ad agencies to sell advertising on their site. Given that many Internet companies use ad agencies to sell advertising on their site, it can be inferred that indentations are space. One may reasonably assume that if soccer is a football, then some rays eat crabs. We know that at least one of two things is true: active dogs can burn off energy, or if some rays eat crabs, then indentations are space. The claim that active dogs can burn off energy has no merit.

Statement: The statement, a facial is a beauty treatment, does not hold.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** One may reasonably assume that if indentations are space, then a facial is a beauty treatment.
 - Let I : "Indentations are space."
 - Let F : "A facial is a beauty treatment."
 - Symbolically: $I \rightarrow F$
2. **Premise 2:** We know that at least one of two things is true:
 - S : "Soccer is a football."
 - M : "Many Internet companies use ad agencies to sell advertising on their site."
 - Symbolically: $S \vee M$
3. **Premise 3:** Given that many Internet companies use ad agencies to sell advertising on their site, it can be inferred that indentations are space.
 - Symbolically: $M \rightarrow I$
4. **Premise 4:** One may reasonably assume that if soccer is a football, then some rays eat crabs.
 - Let R : "Some rays eat crabs."
 - Symbolically: $S \rightarrow R$
5. **Premise 5:** We know that at least one of two things is true:
 - A : "Active dogs can burn off energy."
 - $R \rightarrow I$: "If some rays eat crabs, then indentations are space."
 - Symbolically: $A \vee (R \rightarrow I)$
6. **Premise 6:** The claim that active dogs can burn off energy has no merit.

- Therefore, $\neg A$ is true.

Statement to Evaluate:

- "The statement, a facial is a beauty treatment, does not hold."
- Symbolically: $\neg F$

Logical Reasoning:

1. From Premise 6:

- $\neg A$ is true.

2. From Premise 5:

- $A \vee (R \rightarrow I)$ is true.
- Since A is false ($\neg A$ is true), by **Disjunctive Syllogism**, $R \rightarrow I$ must be true.

3. From Premise 2:

- $S \vee M$ is true.

4. Case Analysis Based on Premise 2:

Case 1: S is true.

- From Premise 4: $S \rightarrow R$.
- Since S is true, by **Modus Ponens**, R is true.
- From step 2: $R \rightarrow I$ is true.
- Applying **Modus Ponens** again, I is true.
- From Premise 1: $I \rightarrow F$.
- Since I is true, F is true (**Modus Ponens**).

Case 2: M is true.

- From Premise 3: $M \rightarrow I$.
- Since M is true, I is true (**Modus Ponens**).
- From Premise 1: $I \rightarrow F$.
- Since I is true, F is true (**Modus Ponens**).

5. Conclusion from Both Cases:

- In both cases, F is true.

Final Conclusion:

- Since F ("A facial is a beauty treatment") is true, the statement $\neg F$ ("The statement, a facial is a beauty treatment, does not hold") is false.

Final Answer: FALSE



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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use

tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: It is a fact that either anomia is a difficulty in finding the correct word to describe an object, action, or situation or genes are made up of DNA molecules, which are the building blocks of heredity. One may reasonably assume that if anomia is a difficulty in finding the correct word to describe an object, action, or situation, then the claim that nurses are engaged in duties has no merit. Assuming genes are made up of DNA molecules, which are the building blocks of heredity, we know that the claim that nurses are engaged in duties has no merit. So long as the claim that either nurses are engaged in duties or groundhogs are great diggers with curved thick claws does not correspond with reality, 'many abstainers choose to avoid intercourse but engage in other forms of sexual intimacy' is true. When many abstainers choose to avoid intercourse but engage in other forms of sexual intimacy is true, it follows that residential mobility is part and parcel of economic mobility. One may reasonably assume that if the claim that either nurses are engaged in duties or groundhogs are great diggers with curved thick claws does not correspond with reality, then computers support learning in mathematics, language arts, science and social studies. One may reasonably assume that if computers support learning in mathematics, language arts, science and social studies, then the notion that 'residential mobility is part and parcel of economic mobility' is untrue.

Statement: It is a common misconception that groundhogs are great diggers with curved thick claws.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** It is a fact that either anomia is a difficulty in finding the correct word to describe an object, action, or situation, or genes are made up of DNA molecules, which are the building blocks of heredity.
 - Let A : "Anomia is a difficulty in finding the correct word to describe an object, action, or situation."
 - Let G : "Genes are made up of DNA molecules, which are the building blocks of heredity."
 - Symbolically: $A \vee G$
2. **Premise 2:** One may reasonably assume that if A , then the claim that nurses are engaged in duties has no merit.
 - Let N : "The claim that nurses are engaged in duties has no merit."
 - Symbolically: $A \rightarrow N$
3. **Premise 3:** Assuming G , we know that N .
 - Symbolically: $G \rightarrow N$
4. **Premise 4:** So long as the claim that either N or groundhogs are great diggers with curved thick claws does not correspond with reality, "many abstainers choose to avoid intercourse but engage in other forms of sexual intimacy" is true.
 - Let D : "Groundhogs are great diggers with curved thick claws."
 - Let M : "Many abstainers choose to avoid intercourse but engage in other forms of sexual intimacy."
 - Symbolically: $\neg(N \vee D) \rightarrow M$
5. **Premise 5:** When M is true, it follows that residential mobility is part and parcel of economic mobility.
 - Let R : "Residential mobility is part and parcel of economic mobility."
 - Symbolically: $M \rightarrow R$
6. **Premise 6:** One may reasonably assume that if $\neg(N \vee D)$, then computers support learning in mathematics, language arts, science, and social studies.
 - Let C : "Computers support learning in mathematics, language arts, science, and social studies."
 - Symbolically: $\neg(N \vee D) \rightarrow C$
7. **Premise 7:** One may reasonably assume that if C , then the notion that R is untrue.
 - Symbolically: $C \rightarrow \neg R$

Statement to Evaluate:

- "It is a common misconception that groundhogs are great diggers with curved thick claws."
- This means that the statement D is false (it's a misconception).
- Symbolically: $\neg D$

Logical Reasoning:

1. From Premise 1:

- $A \vee G$ is true.

2. From Premise 2 and Premise 3:

- $A \rightarrow N$ is true.
- $G \rightarrow N$ is true.

3. Case Analysis on $A \vee G$:

- **Case 1:** Assume A is true.
 - From $A \rightarrow N$, since A is true, N is true (**Modus Ponens**).
- **Case 2:** Assume G is true.
 - From $G \rightarrow N$, since G is true, N is true (**Modus Ponens**).

4. Conclusion from Cases:

- In both cases, N is true.
- Therefore, N is true regardless of whether A or G is true.

5. From Premise 4:

- $\neg(N \vee D) \rightarrow M$ is true.
- Since N is true (from step 4), $N \vee D$ is true.
- Therefore, $\neg(N \vee D)$ is false.
- The antecedent $\neg(N \vee D)$ is false, so we cannot conclude M .

6. From Premise 6:

- $\neg(N \vee D) \rightarrow C$ is true.
- Again, since $N \vee D$ is true, $\neg(N \vee D)$ is false.
- We cannot conclude C .

7. From Premise 5 and Premise 7:

- Since we cannot establish M is true, we cannot conclude R from $M \rightarrow R$.
- Since we cannot establish C is true, we cannot conclude $\neg R$ from $C \rightarrow \neg R$.

8. Assessing the Truth Value of D :

- The premises do not provide direct information about the truth value of D .
- Since N is true, $N \vee D$ is true regardless of the truth value of D .
- Therefore, D could be either true or false, and the truth value of $\neg D$ is undetermined based on the premises.

Conclusion:

- Based on the given premises, we cannot determine whether D ("Groundhogs are great diggers with curved thick claws") is true or false.
- Therefore, we cannot determine the truth value of $\neg D$ (the statement in question).
- The premises neither support nor contradict the statement.

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Should it be the case that the statement that 'if the statement, rocks have a different kind of grain or cross section, does not hold, then cups fill with favorite beverages' is incorrect, it follows that some ice has claws. Those that suggest some ice has claws are wrong. Once we know some women have dental problems during pregnancy, we also know that if the statement, rocks have a different kind of grain or cross section, does not hold, then the statement that 'cups fill with favorite beverages' is incorrect. Given that the statement 'some women have dental problems during pregnancy' can be considered false, it can be inferred that sharks can detect tiny amounts of blood. Either one or both of these statements are true: risk communication is a special area of communication, or if the statement 'some women have dental problems during pregnancy' can be considered false, then the claim that sharks can detect tiny amounts of blood does not correspond with reality. Some people mistakenly believe that risk communication is a special area of communication.

Statement: Rocks are made up of one or more minerals.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** If the statement "If the statement 'Rocks have a different kind of grain or cross section' does not hold, then cups fill with favorite beverages" is incorrect, it follows that some ice has claws.
 - Let R : "The statement 'Rocks have a different kind of grain or cross section' does not hold."
 - Let C : "Cups fill with favorite beverages."
 - Let I : "Some ice has claws."
 - Symbolically: $\neg(R \rightarrow C) \rightarrow I$
2. **Premise 2:** Those that suggest some ice has claws are wrong.
 - Therefore, I is false ($\neg I$ is true).
3. **Premise 3:** Once we know that some women have dental problems during pregnancy, we also know that if R holds, then the statement "Cups fill with favorite beverages" is incorrect.
 - Let W : "Some women have dental problems during pregnancy."
 - Symbolically: $W \rightarrow (R \rightarrow \neg C)$
4. **Premise 4:** Given that the statement "Some women have dental problems during pregnancy" can be considered false, it can be inferred that sharks can detect tiny amounts of blood.
 - Let M : "The statement 'Some women have dental problems during pregnancy' can be considered false."
 - Let S : "Sharks can detect tiny amounts of blood."
 - Symbolically: $M \rightarrow S$
5. **Premise 5:** Either risk communication is a special area of communication, or if M holds, then the claim that sharks can detect tiny amounts of blood does not correspond with reality.
 - Let Q : "Risk communication is a special area of communication."
 - Let $\neg S$: "The claim that sharks can detect tiny amounts of blood does not correspond with reality."
 - Symbolically: $Q \vee (M \rightarrow \neg S)$
6. **Premise 6:** Some people mistakenly believe that risk communication is a special area of communication.
 - Therefore, Q is false ($\neg Q$ is true).

Statement to Evaluate:

- "Rocks are made up of one or more minerals."
 - Let K : "Rocks are made up of one or more minerals."
-

Logical Reasoning:

1. **From Premise 2:**
 - $\neg I$ is true.
2. **From Premise 1:**

- $\neg(R \rightarrow C) \rightarrow I$
- Since $\neg I$ is true, the contrapositive gives:
 - $\neg I \rightarrow (R \rightarrow C)$
- Therefore, $R \rightarrow C$ is true.

3. From Premise 6:

- $\neg Q$ is true.

4. From Premise 5:

- $Q \vee (M \rightarrow \neg S)$ is true.
- Since $\neg Q$ is true, Q is false.
- Therefore, $M \rightarrow \neg S$ must be true.

5. From Premise 4:

- $M \rightarrow S$ is true.

6. Analyzing $M \rightarrow S$ and $M \rightarrow \neg S$:

- Both $M \rightarrow S$ and $M \rightarrow \neg S$ are true.
- This can only be possible if M is false (since a true antecedent cannot lead to both a true and false consequent).
- Therefore, M is false ($\neg M$ is true).

7. Since $\neg M$ is true, the statement "The statement 'Some women have dental problems during pregnancy' can be considered false" is itself false.

- This means the original statement "Some women have dental problems during pregnancy" (W) is true.

8. From Premise 3:

- $W \rightarrow (R \rightarrow \neg C)$
- Since W is true, we have $R \rightarrow \neg C$ is true.

9. Earlier, we established:

- $R \rightarrow C$ is true (from step 2).

10. Comparing $R \rightarrow C$ and $R \rightarrow \neg C$:

- Both $R \rightarrow C$ and $R \rightarrow \neg C$ are true.
- This can only occur if R is false.
- Therefore, $\neg R$ is true.

11. Understanding $\neg R$:

- R is "The statement 'Rocks have a different kind of grain or cross section' does not hold."
- Therefore, $\neg R$ means "The statement 'Rocks have a different kind of grain or cross section' holds."
- So, "Rocks have a different kind of grain or cross section."

12. Linking to the Statement K :

- There is no direct logical connection provided in the premises between "Rocks have a different kind of grain or cross section" and "Rocks are made up of one or more minerals" (K).

Conclusion:

- Based on the given premises, we cannot determine the truth value of the statement K .
- The premises neither support nor contradict the statement "Rocks are made up of one or more minerals."

Final Answer: UNCERTAIN



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: The statement, hind legs are part of quadrupeds, does not hold. When the statement that states either hind legs are part of quadrupeds or the statement that 'mammals have hair or fur on their bodies' is incorrect is false is true, it follows that unemployment is one of the serious problems in quite a number of countries in Southeast Asia. At least one of two things is true: either nonverbal communication involves using body language to convey a message or maladaptive abnormalities can cause suffering and social discomfort, or either all radon gas has a parent nucleus of lead or most trees yield pinyon nuts. Once we know either nonverbal

communication involves using body language to convey a message or maladaptive abnormalities can cause suffering and social discomfort, we also know that either either ocelots have vision or most physicians have chronic pain sufferers taper off a drug in a matter of days or the claim that unemployment is one of the serious problems in quite a number of countries in Southeast Asia does not correspond with reality. One may reasonably assume that if either all radon gas has a parent nucleus of lead or most trees yield pinyon nuts, then either either ocelots have vision or most physicians have chronic pain sufferers taper off a drug in a matter of days or the claim that unemployment is one of the serious problems in quite a number of countries in Southeast Asia does not correspond with reality. One may reasonably assume that if either teamwork is the hallmark of all successful organizations or losses coincide with declines in cardiovascular function and metabolic potential, then the statement that states either ocelots have vision or most physicians have chronic pain sufferers taper off a drug in a matter of days is false. We know that either teamwork is the hallmark of all successful organizations or losses coincide with declines in cardiovascular function and metabolic potential.

Statement: The statement that 'mammals have hair or fur on their bodies' is incorrect.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** The statement, "Hind legs are part of quadrupeds," does not hold.
 - Let H : "Hind legs are part of quadrupeds."
 - Therefore, $\neg H$ is true.
2. **Premise 2:** When the statement that either H or the statement "Mammals have hair or fur on their bodies" is incorrect is false, it follows that unemployment is one of the serious problems in quite a number of countries in Southeast Asia.
 - Let M : "Mammals have hair or fur on their bodies."
 - The statement "either H or $\neg M$ " is $H \vee \neg M$.
 - The statement that $H \vee \neg M$ is false is $\neg(H \vee \neg M)$.
 - Symbolically: $\neg(H \vee \neg M) \rightarrow U$, where U : "Unemployment is one of the serious problems in Southeast Asia."
3. **Premise 3:** At least one of these is true:
 - N : "Nonverbal communication involves using body language to convey a message."
 - A : "Maladaptive abnormalities can cause suffering and social discomfort."
 - R : "All radon gas has a parent nucleus of lead."
 - T : "Most trees yield pinyon nuts."
 - Symbolically: $N \vee A \vee R \vee T$
4. **Premise 4:** If $N \vee A$ is true, then either O or P or $\neg U$ is true.
 - O : "Ocelots have vision."
 - P : "Most physicians have chronic pain sufferers taper off a drug in a matter of days."
 - Symbolically: $(N \vee A) \rightarrow (O \vee P \vee \neg U)$
5. **Premise 5:** If $R \vee T$ is true, then $O \vee P \vee \neg U$ is true.
 - Symbolically: $(R \vee T) \rightarrow (O \vee P \vee \neg U)$
6. **Premise 6:** If $W \vee L$ is true, then $O \vee P$ is false.
 - W : "Teamwork is the hallmark of all successful organizations."

- L : "Losses coincide with declines in cardiovascular function and metabolic potential."
- Symbolically: $(W \vee L) \rightarrow \neg(O \vee P)$

7. **Premise 7:** Either W or L is true.

- Symbolically: $W \vee L$

Statement to Evaluate:

- "The statement that 'mammals have hair or fur on their bodies' is incorrect."
- Symbolically: $\neg M$

Logical Reasoning:

1. **From Premise 1:**

- $\neg H$ is true (H is false).

2. **From $H \vee \neg M$:**

- Since H is false, $H \vee \neg M$ simplifies to $\neg M$.

3. **Therefore, $\neg(H \vee \neg M) = \neg(\neg M) = M$.**

- So M is true.

4. **From Premise 2:**

- $\neg(H \vee \neg M) \rightarrow U$ simplifies to $M \rightarrow U$.

5. **From Premise 7:**

- $W \vee L$ is true.

6. **From Premise 6:**

- Since $W \vee L$ is true, $\neg(O \vee P)$ is true.
- Therefore, $O \vee P$ is false.

7. **From Premise 3:**

- $N \vee A \vee R \vee T$ is true.
- **Case Analysis:**
 - **Case 1:** $N \vee A$ is true.
 - From Premise 4: $(N \vee A) \rightarrow (O \vee P \vee \neg U)$.
 - Since $O \vee P$ is false, $\neg U$ must be true.
 - Therefore, U is false.
 - **Case 2:** $R \vee T$ is true.
 - From Premise 5: $(R \vee T) \rightarrow (O \vee P \vee \neg U)$.
 - Again, $O \vee P$ is false, so $\neg U$ is true.
 - Therefore, U is false.

8. **Conclusion from both cases:**

- U is false.

9. **From Step 4:**

- We have $M \rightarrow U$.
- Since U is false, M must be false for the implication to be true.
- Therefore, M is false.

10. **Therefore, $\neg M$ is true.**

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

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You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
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- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: One may reasonably assume that if mapping is another popular function of GEODynamics, then either some circuits use batteries or most acid dissolves calcites. It is a common misconception that some types of cancer are more likely to spread to the brain. It is a common misconception that duodenums stimulate alkaline secretion. When waitress isa waiter is true, it follows that either some types of cancer are more likely to spread to the brain or if tubing made from a copper-nickel alloy is used in desalination plants, then mapping is another popular function of GEODynamics. The statement 'waitress isa waiter' can be considered true. Either one

or both of these statements are true: if circuits use electricity, then divers are very active in the weight room, tumbling and on the boards, or either polysaccharides are long chains of simple sugars that contain several hydroxyl groups on each sugar or teeth tend to change shades, usually yellow, with age. So long as if circuits use electricity, then divers are very active in the weight room, tumbling and on the boards, 'if the statement that states tubing made from a copper-nickel alloy is used in desalination plants is false, then duodenum stimulate alkaline secretion' is true. Whenever it is true that either polysaccharides are long chains of simple sugars that contain several hydroxyl groups on each sugar or teeth tend to change shades, usually yellow, with age, 'if the statement that states tubing made from a copper-nickel alloy is used in desalination plants is false, then duodenum stimulate alkaline secretion' is true.

Statement: It is a fact that either some circuits use batteries or most acid dissolves calcites.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** If mapping is another popular function of GEodynamics (M), then either some circuits use batteries (B) or most acid dissolves calcites (D).
 - Symbolically: $M \rightarrow (B \vee D)$
2. **Premise 2:** It is a common misconception that some types of cancer are more likely to spread to the brain.
 - Therefore, C ("Some types of cancer are more likely to spread to the brain") is false: $\neg C$ is true.
3. **Premise 3:** It is a common misconception that duodenum stimulate alkaline secretion.
 - Therefore, A ("Duodenum stimulate alkaline secretion") is false: $\neg A$ is true.
4. **Premise 4:** When "Waitress is a waiter" is true (W), it follows that either C or if tubing made from a copper-nickel alloy is used in desalination plants (T), then mapping is another popular function of GEodynamics (M).
 - Symbolically: $W \rightarrow [C \vee (T \rightarrow M)]$
5. **Premise 5:** The statement "Waitress is a waiter" can be considered true.
 - Therefore, W is true.
6. **Premise 6:** Either one or both of these statements are true:
 - $E \rightarrow V$: If circuits use electricity (E), then divers are very active in the weight room, tumbling, and on the boards (V).
 - $S \vee Y$: Either polysaccharides are long chains of simple sugars that contain several hydroxyl groups on each sugar (S), or teeth tend to change shades, usually yellow, with age (Y).
 - Symbolically: $(E \rightarrow V) \vee (S \vee Y)$
7. **Premise 7:** So long as $E \rightarrow V$ is true, "If tubing made from a copper-nickel alloy is used in desalination plants is false ($\neg T$), then duodenum stimulate alkaline secretion (A)" is true.
 - Symbolically: $(E \rightarrow V) \rightarrow (\neg T \rightarrow A)$
8. **Premise 8:** Whenever $S \vee Y$ is true, "If $\neg T$, then A " is true.
 - Symbolically: $(S \vee Y) \rightarrow (\neg T \rightarrow A)$

Statement to Evaluate:

- "It is a fact that either some circuits use batteries or most acid dissolves calcites."
- Symbolically: $B \vee D$

Logical Reasoning:

1. **From Premise 5:**
 - W is true.
2. **From Premise 4 and W being true:**
 - $W \rightarrow [C \vee (T \rightarrow M)]$ is true.
 - By **Modus Ponens**, $C \vee (T \rightarrow M)$ is true.
3. **From Premise 2, $\neg C$ is true (since C is a misconception).**
 - Therefore, C is false.
 - So, $T \rightarrow M$ must be true.
4. **From Premise 3, $\neg A$ is true (since A is a misconception).**
5. **From Premise 6, either $E \rightarrow V$ or $S \vee Y$ is true.**
6. **From Premises 7 and 8:**
 - If $E \rightarrow V$ is true, then $\neg T \rightarrow A$ is true.
 - If $S \vee Y$ is true, then $\neg T \rightarrow A$ is true.
 - Since one of these is true, $\neg T \rightarrow A$ is true.
7. **Since $\neg A$ is true (from step 4):**
 - For $\neg T \rightarrow A$ to be true while A is false ($\neg A$ is true), $\neg T$ must be false.
 - Therefore, $\neg T$ is false, so T is true.
8. **From step 3, $T \rightarrow M$ is true and T is true.**
 - By **Modus Ponens**, M is true.
9. **From Premise 1 and M being true:**
 - $M \rightarrow (B \vee D)$ is true.
 - By **Modus Ponens**, $B \vee D$ is true.

Conclusion:

- The statement $B \vee D$ ("Either some circuits use batteries or most acid dissolves calcites") is **TRUE** based on the premises.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum

- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: We know that either capacitance is the ability to store charge or cox isa sailor. If if ovulatory problems are reversible by changing behavioral patterns, then weapons training emphasizes the basic postures and stances that are a fundamental part of aikido, then either if most petrol pumps have a small pipe inside the nozzle, then caffeinism is an intoxication or the statement, capacitance is the ability to store charge, does not hold. The claim that grooming cause gets is true. So long as the statement 'if ovulatory problems are reversible by changing behavioral patterns, then weapons training emphasizes the basic postures and stances that are a fundamental part of aikido' can be considered false, 'grubs are soft, worm-like lava of beetles' is true. The statement that states grubs are soft, worm-like lava of beetles is false. We know that either most epidermises have stomata or if grooming cause gets, then the claim that if most petrol pumps have a small pipe inside the nozzle, then caffeinism is an intoxication does not reflect reality. The statement that 'most epidermises have stomata' is incorrect.

Statement: A cox is a seaman.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** We know that either capacitance is the ability to store charge or a cox is a sailor.
 - Let:
 - C : "Capacitance is the ability to store charge."
 - S : "A cox is a sailor."
 - Symbolically: $C \vee S$
2. **Premise 2:** If "If ovulatory problems are reversible by changing behavioral patterns, then weapons training emphasizes the basic postures and stances that are a fundamental part of aikido" is true, then either "If most petrol pumps have a small pipe inside the nozzle, then caffeinism is an intoxication" or the statement C does not hold.
 - Let:
 - O : "Ovulatory problems are reversible by changing behavioral patterns."
 - W : "Weapons training emphasizes the basic postures and stances that are a fundamental part of aikido."
 - P : "Most petrol pumps have a small pipe inside the nozzle."
 - F : "Caffeinism is an intoxication."
 - $\neg C$: "The statement C does not hold."
 - Symbolically: $(O \rightarrow W) \rightarrow [(P \rightarrow F) \vee \neg C]$
3. **Premise 3:** The claim that "Grooming cause gets" is true.
 - Let:
 - G : "Grooming cause gets."
 - Since the claim is true, G is true.
4. **Premise 4:** So long as the statement $O \rightarrow W$ can be considered false, "Grubs are soft, worm-like larvae of beetles" is true.
 - Let:
 - U : "Grubs are soft, worm-like larvae of beetles."
 - Symbolically: $\neg(O \rightarrow W) \rightarrow U$
5. **Premise 5:** The statement U is false.
 - Therefore, $\neg U$ is true.
6. **Premise 6:** We know that either most epidermises have stomata, or if G is true, then the claim $P \rightarrow F$ does not reflect reality.
 - Let:
 - E : "Most epidermises have stomata."
 - $\neg(P \rightarrow F)$: "The claim $P \rightarrow F$ does not reflect reality."
 - Symbolically: $E \vee (G \rightarrow \neg(P \rightarrow F))$
7. **Premise 7:** The statement E is incorrect.
 - Therefore, $\neg E$ is true.

Logical Reasoning:

1. **From Premise 7:**
 - $\neg E$ is true.
 - Therefore, E is false.
2. **From Premise 6:**

- $E \vee (G \rightarrow \neg(P \rightarrow F))$ is true.
- Since E is false, $G \rightarrow \neg(P \rightarrow F)$ must be true.

3. From Premise 3:

- G is true.
- Using **Modus Ponens** on $G \rightarrow \neg(P \rightarrow F)$, we conclude $\neg(P \rightarrow F)$ is true.
- So, the implication $P \rightarrow F$ is false.

4. From Premise 2:

- $(O \rightarrow W) \rightarrow [(P \rightarrow F) \vee \neg C]$ is true.
- We have $\neg(P \rightarrow F)$ is true (from step 3), so $(P \rightarrow F) \vee \neg C$ simplifies to $\neg C$ must be true.
- Therefore, $(O \rightarrow W) \rightarrow \neg C$ is true.

5. From Premise 4 and Premise 5:

- $\neg(O \rightarrow W) \rightarrow U$ is true.
- $\neg U$ is true (from Premise 5), so U is false.
- For the implication $\neg(O \rightarrow W) \rightarrow U$ to be true when U is false, $\neg(O \rightarrow W)$ must be false.
- Therefore, $O \rightarrow W$ is true.

6. Using the result from step 5 in step 4:

- Since $O \rightarrow W$ is true, the implication $(O \rightarrow W) \rightarrow \neg C$ becomes true.
- Therefore, $\neg C$ is true.
- So, C is false.

7. From Premise 1:

- $C \vee S$ is true.
- Since C is false (from step 6), S must be true.

Conclusion:

- S : "A cox is a sailor" is true.
- The statement to evaluate is "A cox is a seaman."
- Assuming "sailor" and "seaman" are equivalent in this context (since we must rely solely on the premises and not external knowledge), the statement is **TRUE**.

Final Answer: TRUE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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- Hypothetical Syllogism
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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.
 Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.
 Premise 2: The claim that most dolphins have year lifespans does not reflect reality.
 Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.
 Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.
 Therefore, the final answer is FALSE.

Paragraph: Provided that some papaya prevents hunger, we know that if marriage is a legal relationship and a social status understood everywhere, then north korean government takes steps, then the statement that states black spirituals are one of the best known and earliest forms of American music is false. Given that marriage is a legal relationship and a social status understood everywhere, it can be inferred that vagrants have (part) heads. Should it be the case that it is a common misconception that either some papaya prevents hunger or wind creates mechanical forces, it follows that some nematodes cause gastroenteritis. It is a common misconception that some nematodes cause gastroenteritis. If either education is the key to success of any community and of every economy or drug interactions are a major health problem, then if wind creates mechanical forces, then if marriage is a legal relationship and a social status understood everywhere, then north korean government takes steps, then the statement that states black spirituals are one of the best known and earliest forms of American music is false. We know that either education is the key to success of any community and of every economy or drug interactions are a major health problem. When the statement that 'if vagrants have (part) heads, then north korean government takes steps' is incorrect is true, it follows that muscular atrophy can cause serious problems in a person 's life . It is not the case that muscular atrophy can cause serious problems in a person 's life .

Statement: It is the case that black spirituals are one of the best known and earliest forms of American music.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Provided that some papaya prevents hunger, we know that if *if marriage is a legal relationship and a social status understood everywhere, then North Korean government takes steps*, then the statement that states *black spirituals are one of the best known and earliest forms of American music* is false.
 - Let:
 - P : "Some papaya prevents hunger."
 - M : "Marriage is a legal relationship and a social status understood everywhere."
 - N : "North Korean government takes steps."
 - B : "Black spirituals are one of the best known and earliest forms of American music."
 - Symbolically: $P \rightarrow [(M \rightarrow N) \rightarrow \neg B]$
2. **Premise 2:** Given that M , it can be inferred that vagrants have (part) heads.
 - Let V : "Vagrants have (part) heads."
 - Symbolically: $M \rightarrow V$
3. **Premise 3:** Should it be the case that it is a common misconception that either P or wind creates mechanical forces (W), it follows that some nematodes cause gastroenteritis (E).
 - Symbolically: $\neg(P \vee W) \rightarrow E$
4. **Premise 4:** It is a common misconception that some nematodes cause gastroenteritis.
 - Therefore, $\neg E$ is true.
5. **Premise 5:** If either education is the key to success (K) or drug interactions are a major health problem (D), then if W , then $(M \rightarrow N) \rightarrow \neg B$.
 - Symbolically: $(K \vee D) \rightarrow [W \rightarrow (M \rightarrow N) \rightarrow \neg B]$
6. **Premise 6:** We know that $K \vee D$ is true.
7. **Premise 7:** When the statement that "If V , then N " is incorrect is true, it follows that muscular atrophy can cause serious problems in a person's life (A).
 - The incorrectness of "If $V \rightarrow N$ " is $\neg(V \rightarrow N)$.
 - Symbolically: $\neg(V \rightarrow N) \rightarrow A$
8. **Premise 8:** It is not the case that muscular atrophy can cause serious problems in a person's life.
 - Therefore, $\neg A$ is true.

Statement to Evaluate:

- "It is the case that black spirituals are one of the best known and earliest forms of American music."
 - This asserts that B is true.

Logical Reasoning:

1. **From Premise 4:**
 - $\neg E$ is true.
2. **From Premise 3:**

- $\neg(P \vee W) \rightarrow E$
- Since E is false ($\neg E$ is true), for the implication to be true, the antecedent $\neg(P \vee W)$ must be false.
- Therefore, $\neg(P \vee W)$ is false, so $P \vee W$ is true.

3. From Step 2:

- Either P is true, or W is true.

4. From Premise 6:

- $K \vee D$ is true.

5. From Premise 5 and Step 4**:

- Since $K \vee D$ is true, the implication simplifies to:
 - $W \rightarrow [(M \rightarrow N) \rightarrow \neg B]$

6. From Premise 7 and Premise 8:

- $\neg(V \rightarrow N) \rightarrow A$ is true.
- $\neg A$ is true.
- Since the consequent A is false, the antecedent $\neg(V \rightarrow N)$ must be false (by **Modus Tollens**).
- Therefore, $V \rightarrow N$ is true.

7. From Premise 2:

- $M \rightarrow V$ is true.

8. By Hypothetical Syllogism with $M \rightarrow V$ and $V \rightarrow N$:

- $M \rightarrow N$ is true.

9. Analyzing Cases:

- **Case 1:** W is true.
 - From Step 5: $W \rightarrow [(M \rightarrow N) \rightarrow \neg B]$
 - Since W is true and $M \rightarrow N$ is true (from Step 8), we have:
 - $(M \rightarrow N) \rightarrow \neg B$ is true.
 - Since $M \rightarrow N$ is true, this simplifies to $\neg B$ (**Modus Ponens**).
 - Therefore, $\neg B$ is true.
- **Case 2:** P is true.
 - From Premise 1: $P \rightarrow [(M \rightarrow N) \rightarrow \neg B]$
 - Since P is true and $M \rightarrow N$ is true, we have:
 - $(M \rightarrow N) \rightarrow \neg B$ is true.
 - This simplifies to $\neg B$ (**Modus Ponens**).
 - Therefore, $\neg B$ is true.

10. Conclusion:

- In both cases, $\neg B$ is true, so B is false.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

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- Hypothetical Syllogism
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You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Provided that the claim that evolution is a belief system that is imposed on the facts does not correspond with reality, we know that boilers are vessels. It is not the case that either porpoises have triangular heads or fuel cells can help our economy grow while improving the condition of the planet. Should it be the case that the statement, if the claim that if libertarians say that markets give the right incentives, along with liability laws, then some people mistakenly believe that boilers are vessels has no merit, then either porpoises have triangular heads or fuel cells can help our economy grow while improving the condition of the planet, does not hold, it follows that either reinforcement is the maintenance of community norms or light becomes the conscious medium of our expression as well as the source of our energy. Provided that the statement, if the claim that if libertarians say that markets give the right incentives, along with liability laws, then some people mistakenly believe that boilers are vessels has no merit, then either porpoises have triangular heads or fuel cells can help our economy grow while improving the condition of the planet, does not hold, we know that it is a common misconception that either reinforcement is the maintenance of community norms or light becomes the conscious medium

of our expression as well as the source of our energy. We know that at least one of two things is true: if heavy vehicles are a major contributor to elevated noise levels, then tortricid moths are among the most significant pests of forest trees and fruit orchards worldwide, or obesity is associated with a large number of very important diseases. One may reasonably assume that if heavy vehicles are a major contributor to elevated noise levels, then tortricid moths are among the most significant pests of forest trees and fruit orchards worldwide, then pecan growers start harvesting after early freezes knock leaves off the trees. Should it be the case that obesity is associated with a large number of very important diseases, it follows that libertarians say that markets give the right incentives, along with liability laws. When pecan growers start harvesting after early freezes knock leaves off the trees is true, it follows that hunger is the supreme disease. So long as pecan growers start harvesting after early freezes knock leaves off the trees, 'the statement that states hunger is the supreme disease is false' is true.

Statement: We know that the claim that evolution is a belief system that is imposed on the facts is false.

Answer:



Premises and Symbol Definitions:

1. **Premise 1:** Provided that the claim that evolution is a belief system that is imposed on the facts does not correspond with reality, we know that boilers are vessels.
 - Let:
 - E : The claim that "Evolution is a belief system that is imposed on the facts" does not correspond with reality.
 - B : Boilers are vessels.
 - Symbolically: $E \rightarrow B$
2. **Premise 2:** It is not the case that either porpoises have triangular heads or fuel cells can help our economy grow while improving the condition of the planet.
 - Let:
 - P : Porpoises have triangular heads.
 - F : Fuel cells can help our economy grow while improving the condition of the planet.
 - Symbolically: $\neg(P \vee F)$, which simplifies to $\neg P \wedge \neg F$
3. **Premise 3:** Should it be the case that the statement, "If the claim that 'if libertarians say that markets give the right incentives, along with liability laws (L), then some people mistakenly believe that boilers are vessels (M)' has no merit (C), then $P \vee F$," does not hold, it follows that either reinforcement is the maintenance of community norms or light becomes the conscious medium of our expression as well as the source of our energy.
 - Let:
 - L : Libertarians say that markets give the right incentives, along with liability laws.
 - M : Some people mistakenly believe that boilers are vessels.
 - C : The claim that $L \rightarrow M$ has no merit.
 - R : Reinforcement is the maintenance of community norms.
 - L' : Light becomes the conscious medium of our expression as well as the source of our energy.
 - S : The statement "If C , then $P \vee F$."

- Symbolically:
 - $S: C \rightarrow (P \vee F)$
 - The premise: $\neg S \rightarrow (R \vee L')$
- 4. **Premise 4:** Provided that $\neg S$ (from Premise 3), we know that it is a common misconception that either R or L' .
 - Symbolically: $\neg S \rightarrow \neg(R \vee L')$
- 5. **Premise 5:** We know that at least one of two things is true: "If heavy vehicles are a major contributor to elevated noise levels (H), then tortricid moths are among the most significant pests of forest trees and fruit orchards worldwide (T)," or obesity is associated with a large number of very important diseases.
 - Let:
 - H : Heavy vehicles are a major contributor to elevated noise levels.
 - T : Tortricid moths are significant pests.
 - O : Obesity is associated with many important diseases.
 - Symbolically: $(H \rightarrow T) \vee O$
- 6. **Premise 6:** One may reasonably assume that if $H \rightarrow T$, then pecan growers start harvesting after early freezes knock leaves off the trees.
 - Let:
 - P : Pecan growers start harvesting after early freezes.
 - Symbolically: $(H \rightarrow T) \rightarrow P$
- 7. **Premise 7:** Should it be the case that O , it follows that L (from Premise 3).
 - Symbolically: $O \rightarrow L$
- 8. **Premise 8:** When P is true, it follows that hunger is the supreme disease.
 - Let:
 - H' : Hunger is the supreme disease.
 - Symbolically: $P \rightarrow H'$
- 9. **Premise 9:** So long as P is true, "the statement that states hunger is the supreme disease is false" is true.
 - Symbolically: $P \rightarrow \neg H'$

Logical Reasoning:

1. **From Premise 9 and Premise 8:**
 - $P \rightarrow H'$ (Premise 8)
 - $P \rightarrow \neg H'$ (Premise 9)
 - Therefore, $P \rightarrow (H' \wedge \neg H')$, which is a contradiction.
 - This means P must be false. So, $\neg P$ is true.
2. **From Premise 6:**
 - $(H \rightarrow T) \rightarrow P$
 - Since P is false ($\neg P$ is true), the only way for the implication to be true is if $H \rightarrow T$ is false.
 - Therefore, $\neg(H \rightarrow T)$ is true.
3. **From Premise 5:**
 - $(H \rightarrow T) \vee O$
 - Since $H \rightarrow T$ is false ($\neg(H \rightarrow T)$ is true), O must be true.
4. **From Premise 7:**
 - $O \rightarrow L$

- Since O is true, L is true.

5. Analyzing C from Premise 3:

- $S: C \rightarrow (P \vee F)$
- From Premise 2: $\neg P \wedge \neg F$ is true.
- Therefore, $P \vee F$ is false.
- For S to be true, C must be false (since $C \rightarrow \text{False}$ is only true if C is false).
- So, $\neg C$ is true.

6. Understanding C and L :

- C : The claim that $L \rightarrow M$ has no merit.
- $\neg C$ means the claim $L \rightarrow M$ has merit; thus, $L \rightarrow M$ is true.
- Since L is true (from step 4), using **Modus Ponens**:
 - $L \rightarrow M$ (from $\neg C$)
 - Therefore, M is true.

7. Analyzing M and B :

- M : Some people mistakenly believe that boilers are vessels.
- Since M is true, and it's about a mistaken belief, this implies that B is false (if B were true, the belief wouldn't be mistaken).

8. From Premise 1:

- $E \rightarrow B$
- Since B is false ($\neg B$ is true), using **Modus Tollens**, $\neg E$ is true.
- Therefore, E is false.

9. Understanding E and the Statement:

- E : "The claim that evolution is a belief system imposed on the facts does not correspond with reality."
- E being false means the claim does correspond with reality.
- Therefore, "The claim that evolution is a belief system that is imposed on the facts" is considered true.

10. Assessing the Statement:

- The statement to evaluate is: "We know that the claim that evolution is a belief system that is imposed on the facts is false."
- Since we've concluded that the claim is actually true, the statement is **FALSE**.

Final Answer: FALSE



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

Here is the list of argument forms:

- Modus Ponens
- Modus Tollens
- Hypothetical Syllogism
- Disjunctive Syllogism
- Reductio ad absurdum
- Constructive Dilemma
- Disjunction Elimination

You must answer with either one of the 3 options:

- TRUE: When the premises in the paragraph lead to the statement
- FALSE: When the premises in the paragraph directly contradict the statement
- UNCERTAIN: When the premises in the paragraph neither support nor contradict the statement

Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.
 This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.
 Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.
 Premise 2: The claim that most dolphins have year lifespans does not reflect reality.
 Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.
 Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.
 Therefore, the final answer is FALSE.

Paragraph: Whenever it is true that all cells require oxygen to function, 'if the statement that states either if grandchildren have (part) plasma membranes, then names are bobs or if stones seem to be more common in hot climates and during summer months, then atoms absorb light only at particular energies is false, then prophets are the last word throughout the Bible' is true. Those that suggest all cells require oxygen to function are right. Assuming prophets are the last word throughout the Bible, we know that few pregnancies result from incestuous relationships. Assuming prophets are the last word throughout the Bible, we know that the statement that states few pregnancies result from incestuous relationships is false. When if grandchildren have (part) plasma membranes, then names are bobs is true, it follows that many spore pustules develop in the decaying leaves and stems. One may reasonably assume that if many spore pustules develop in the decaying leaves and stems, then deer have requirements. So long as retroviruses use reverse transcription to make copies of themselves, 'the statement, deer have requirements, does not hold' is true. retroviruses use reverse transcription to make copies of themselves.

Statement: Provided that stones seem to be more common in hot climates and during summer months, we know that atoms absorb light only at particular energies

Answer:



You are given a paragraph of facts/premises, followed by a statement. Perform logical reasoning with propositional logic on the paragraph to determine the truth value of the statement.

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Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or

another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: Whenever it is true that all cells require oxygen to function, 'if the statement that states either if grandchildren have (part) plasma membranes, then names are bobs or if stones seem to be more common in hot climates and during summer months, then atoms absorb light only at particular energies is false, then prophets are the last word throughout the Bible' is true. Those that suggest all cells require oxygen to function are right. Assuming prophets are the last word throughout the Bible, we know that few pregnancies result from incestuous relationships. Assuming prophets are the last word throughout the Bible, we know that the statement that states few pregnancies result from incestuous relationships is false. When if grandchildren have (part) plasma membranes, then names are bobs is true, it follows that many spore pustules develop in the decaying leaves and stems. One may reasonably assume that if many spore pustules develop in the decaying leaves and stems, then deer have requirements. So long as retroviruses use reverse transcription to make copies of themselves, 'the statement, deer have requirements, does not hold' is true. retroviruses use reverse transcription to make copies of themselves.

Statement: Provided that stones seem to be more common in hot climates and during summer months, we know that atoms absorb light only at particular energies

Answer:



Definitions and Symbolizations:

Let me assign propositional variables to the statements for clarity.

1. A : All cells require oxygen to function.
2. B : Grandchildren have (part) plasma membranes.
3. C : Names are bobs.
4. D : Stones seem to be more common in hot climates and during summer months.
5. E : Atoms absorb light only at particular energies.
6. F : Prophets are the last word throughout the Bible.
7. G : The statement "Either $B \rightarrow C$ or $D \rightarrow E$ " is false.
8. H : Few pregnancies result from incestuous relationships.
9. I : Many spore pustules develop in the decaying leaves and stems.
10. J : Deer have requirements.
11. K : Retroviruses use reverse transcription to make copies of themselves.

Premises:

1. **Premise 1:** Whenever A is true, the statement "If G , then F " is true.
 - Symbolically: $A \rightarrow (G \rightarrow F)$
2. **Premise 2:** Those that suggest A are right.
 - Therefore, A is true.
3. **Premise 3:** Assuming F , we know that H is true.
 - $F \rightarrow H$
4. **Premise 4:** Assuming F , we know that H is false.

- $F \rightarrow \neg H$
- 5. **Premise 5:** When $B \rightarrow C$ is true, it follows that I is true.
 - $(B \rightarrow C) \rightarrow I$
- 6. **Premise 6:** If I is true, then J is true.
 - $I \rightarrow J$
- 7. **Premise 7:** So long as K is true, the statement " J does not hold" is true.
 - $K \rightarrow \neg J$
- 8. **Premise 8:** K is true.

Statement to Evaluate:

- "Provided that D is true, we know that E is true."
 - Symbolically: $D \rightarrow E$

Logical Reasoning:

1. **From Premise 2,** A is true.
2. **From Premise 1** and A being true:
 - $A \rightarrow (G \rightarrow F)$
 - Therefore, $G \rightarrow F$ is true.
3. **Premises 3 and 4** lead to a contradiction:
 - $F \rightarrow H$ and $F \rightarrow \neg H$
 - This implies H and $\neg H$, which is impossible.
 - Therefore, F **must be false** (by **Reductio ad absurdum**).
4. **Since $G \rightarrow F$ is true** and F is false:
 - The only way $G \rightarrow F$ is true when F is false is if G is false (because a false consequent in an implication requires a false antecedent for the implication to be true).
 - Therefore, G **is false**.
5. **Recall that G is the statement "Either $B \rightarrow C$ or $D \rightarrow E$ " is false.**
 - Since G is false, the statement "Either $B \rightarrow C$ or $D \rightarrow E$ " is **true**.
 - Symbolically: $\neg G$ implies $(B \rightarrow C) \vee (D \rightarrow E)$ is true.
6. **Assuming $B \rightarrow C$ is true:**
 - From Premise 5: $(B \rightarrow C) \rightarrow I$
 - Since $B \rightarrow C$ is true, I is true.
7. **From Premise 6:**
 - $I \rightarrow J$
 - Since I is true, J is true.
8. **From Premise 7** and K being true (Premise 8):
 - $K \rightarrow \neg J$
 - Since K is true, $\neg J$ is true.
 - This contradicts the conclusion in step 7 that J is true.
9. **Therefore, our assumption that $B \rightarrow C$ is true leads to a contradiction.**
 - Thus, $B \rightarrow C$ must be false.
 - Hence, $(D \rightarrow E)$ must be **true** (since $(B \rightarrow C) \vee (D \rightarrow E)$ is true).

Conclusion:

- The statement $D \rightarrow E$ ("Provided that stones seem to be more common in hot climates and during summer months, we know that atoms absorb light only at particular energies") is **true** based on the premises.

Final Answer: TRUE



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Do not use your prior knowledge; your answer must be solely determined by the information within the paragraph. Assume that all premises in the paragraph are true.

Question: Is the statement true, false, or uncertain?

Paragraph: It is a fact that either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers. It is not the case that pampas grass is a large bunchgrass from South America.

Statement: It is rational to agree that gifted children are usually markedly different from their peers.

Answer:

Premise 1: Either pampas grass is a large bunchgrass from South America or gifted children are usually markedly different from their peers.

Premise 2: It is not the case that pampas grass is a large bunchgrass from South America.

Using disjunctive syllogism with premises 1 and 2, we conclude that gifted children are usually markedly different from their peers.

Therefore, the final answer is TRUE.

Paragraph: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power. Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or

another in Canada, and it affects our lives in many ways. We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways. We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Statement: Many people experience weight loss by increasing daily water intake only.

Answer:

Premise 1: We know that either outdoor pet bites Most bites from pets are from dogs or cats or if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 2: We know that the claim that outdoor pet bites Most bites from pets are from dogs or cats is false.

Using disjunctive syllogism with premises 1 and 2, we form the subconclusion that if power is transient and no human being can be the repository of absolute power, then many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Premise 3: We know that at least one of two things is true: an oriental bittersweet is a vine, or power is transient and no human being can be the repository of absolute power.

Premise 4: Given that an oriental bittersweet is a vine, it can be inferred that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

Using disjunction elimination with premises 1 and 2 and the above subconclusion, we conclude that it is reasonable to believe that many people use tobacco in one form or another in Canada, and it affects our lives in many ways.

This argument neither supports nor contradicts the statement many people experience weight loss by increasing daily water intake only.

Therefore, the final answer is UNCERTAIN.

Paragraph: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false. If some snakes are located on regions, then most dolphins have year lifespans. The claim that most dolphins have year lifespans does not reflect reality.

Statement: The statement that states plants range from dwarfs to mature specimens is right.

Answer:

Premise 1: If some snakes are located on regions, then most dolphins have year lifespans.

Premise 2: The claim that most dolphins have year lifespans does not reflect reality.

Using modus tollens with premise 1 and 2, we form the subconclusion that it is not true that some snakes are located on regions.

Premise 3: We know that at least one of two things is true: some snakes are located on regions, or the statement 'plants range from dwarfs to mature specimens' can be considered false.

Using disjunctive syllogism with premise 3 and the above subconclusion, we conclude that the statement 'plants range from dwarfs to mature specimens' can be considered false.

Therefore, the final answer is FALSE.

Paragraph: When light is part of many of our spiritual traditions is true, it follows that some people mistakenly believe that higher education is education. Once we know smoking is particularly hazardous to the female reproductive tract, we also know that some people mistakenly believe that higher education is education. So long as complexity is a tax burden, 'either light is part of many of our spiritual traditions or smoking is particularly hazardous to the female reproductive tract' is true. Once we know gender describes characteristics of men and women which are determined by society, we also know that complexity is a tax burden. The statement 'gastropod isa mollusc' can be considered false. One may reasonably assume that if diets trigger effects, then if ground water reappears at the earth's surface as springs, seeps in wells, then malignant hyperthermia is characterized by an extremely elevated metabolism within the muscle cell. Once we know if ground water reappears at the earth's surface as springs, seeps in wells, then malignant hyperthermia is characterized by an extremely elevated metabolism within the muscle cell, we also know that complexity is a tax burden. Whenever it is true that some ice reduces friction, 'gastropod isa mollusc' is true. It is a fact that either some guitar players use a slide to emulate the sound of a person cryin' or computer viruses can have a devastating effect on an organisation. So long as some guitar players use a slide to emulate the sound of a person cryin', 'if it is a common misconception that either diets trigger effects or gender describes characteristics of men and women which are determined by society, then some ice reduces friction' is true. When computer viruses can have a devastating effect on an organisation is true, it follows that if it is a common misconception that either diets trigger effects or gender describes characteristics of men and women which are determined by society, then some ice reduces friction.

Statement: The statement, higher education refers to courses that are higher than 'A' level, does not hold.

Answer:



Definitions and Symbolizations:

Let me assign propositional variables to the statements for clarity.

1. L : Light is part of many of our spiritual traditions.
2. S : Smoking is particularly hazardous to the female reproductive tract.
3. H : Some people mistakenly believe that higher education is education.
4. C : Complexity is a tax burden.
5. G : Gender describes characteristics of men and women which are determined by society.
6. M : "Gastropod isa mollusc."
7. D : Diets trigger effects.
8. W : Groundwater reappears at the earth's surface as springs, seeps in wells.
9. MH : Malignant hyperthermia is characterized by an extremely elevated metabolism within the muscle cell.
10. I : Some ice reduces friction.
11. GP : Some guitar players use a slide to emulate the sound of a person cryin'.
12. V : Computer viruses can have a devastating effect on an organization.
13. E : It is a common misconception that either diets trigger effects or gender describes characteristics of men and women which are determined by society.
14. HE : Higher education refers to courses that are higher than 'A' level.

Premises:

1. **Premise 1:** When L is true, it follows that H is true.
 - $L \rightarrow H$
2. **Premise 2:** Once we know S , we also know that H .
 - $S \rightarrow H$
3. **Premise 3:** So long as C , "either L or S " is true.
 - $C \rightarrow (L \vee S)$
4. **Premise 4:** Once we know G , we also know that C .
 - $G \rightarrow C$
5. **Premise 5:** The statement M can be considered false.
 - $\neg M$ is true.
6. **Premise 6:** If D is true, then if W , then MH .
 - $D \rightarrow (W \rightarrow MH)$
7. **Premise 7:** Once we know $W \rightarrow MH$, we also know that C .
 - $(W \rightarrow MH) \rightarrow C$
8. **Premise 8:** Whenever I is true, M is true.
 - $I \rightarrow M$
9. **Premise 9:** It is a fact that either GP or V is true.
 - $GP \vee V$
10. **Premise 10:** So long as GP , "if E , then I " is true.
 - $GP \rightarrow (E \rightarrow I)$
11. **Premise 11:** When V is true, it follows that if E , then I .
 - $V \rightarrow (E \rightarrow I)$

Logical Reasoning:

1. **From Premise 5 and Premise 8:**
 - $\neg M$ is true.
 - $I \rightarrow M$ is true.
 - Using **Modus Tollens**, since $\neg M$ and $I \rightarrow M$, we conclude $\neg I$ is true.
2. **From Premise 9:**
 - $GP \vee V$ is true.
3. **Analyzing both cases of Premise 9:**
 - **Case A:** Assume GP is true.
 - From Premise 10: $GP \rightarrow (E \rightarrow I)$.
 - Since GP is true, $E \rightarrow I$ is true.
 - Since $\neg I$ is true (from step 1), $E \rightarrow I$ can only be true if E is false (using **Modus Tollens**).
 - Therefore, $\neg E$ is true.
 - **Case B:** Assume V is true.
 - From Premise 11: $V \rightarrow (E \rightarrow I)$.
 - Since V is true, $E \rightarrow I$ is true.
 - Again, since $\neg I$ is true, $E \rightarrow I$ implies $\neg E$ is true.
4. **Conclusion from both cases:**
 - Regardless of whether GP or V is true, $\neg E$ is true.

5. Understanding $\neg E$:

- E : "It is a common misconception that either D or G ."
- $\neg E$: "It is not a misconception that either D or G ."
- Therefore, $D \vee G$ is accepted as true.

6. Analyzing $D \vee G$:

- **Case A:** Assume D is true.
 - From Premise 6: $D \rightarrow (W \rightarrow MH)$.
 - From Premise 7: $(W \rightarrow MH) \rightarrow C$.
 - By **Hypothetical Syllogism**, $D \rightarrow C$.
- **Case B:** Assume G is true.
 - From Premise 4: $G \rightarrow C$.

7. Conclusion from both cases:

- C is true.

8. From Premise 3:

- $C \rightarrow (L \vee S)$.
- Since C is true, $L \vee S$ is true.

9. From Premise 1 and Premise 2:

- $L \rightarrow H$.
- $S \rightarrow H$.

10. Since $L \vee S$ is true, at least one of L or S is true.

- Therefore, H is true.

11. Understanding H :

- H : "Some people mistakenly believe that higher education is education."
- This means there is a misconception that higher education is education.

12. Assessing the Statement:

- **Statement:** "The statement, higher education refers to courses that are higher than 'A' level, does not hold."
- Symbolically: $\neg HE$.

13. Connection Between H and HE :

- The premises establish that H is true, but they do not provide any information about HE or $\neg HE$.
- There is no logical pathway from H to $\neg HE$ based on the given premises.

Conclusion:

- The premises lead us to conclude that H is true.
- However, there is no information connecting H (a misconception about higher education being education) to HE (whether higher education refers to courses higher than 'A' level).
- Therefore, we cannot determine the truth value of the statement based solely on the given premises.

Final Answer: UNCERTAIN

ChatGPT can make mistakes. Check important info.