

I will give you a set of facts F1 to F91, facts G1 to G2 and a template for a logical rule. Please generate one single rule to match the template and logically entail the facts G1 to G2 based on facts F1 to F91.

F1: *r1*(angelina, michael).
F2: *r45*(michael, angelina).
F3: *r1*(angelina, jan).
F4: *r45*(jan, angelina).
F5: *r1*(angelina, jonathan).
F6: *r45*(jonathan, angelina).
F7: *r1*(emily, katharina).
F8: *r45*(katharina, emily).
F9: *r1*(emily, adam).
F10: *r45*(adam, emily).
F11: *r1*(nora, theodor).
F12: *r45*(theodor, nora).
F13: *r1*(jan, lea).
F14: *r45*(lea, jan).
F15: *r1*(magdalena, angelina).
F16: *r45*(angelina, magdalena).
F17: *r1*(matthias, angelina).
F18: *r45*(angelina, matthias).
F19: *r1*(nico, sebastian).
F20: *r45*(sebastian, nico).
F21: *r1*(claudia, sebastian).
F22: *r45*(sebastian, claudia).
F23: *r1*(emil, michael).
F24: *r45*(michael, emil).
F25: *r1*(emil, jan).
F26: *r45*(jan, emil).
F27: *r1*(emil, jonathan).
F28: *r45*(jonathan, emil).
F29: *r1*(alina, lea).
F30: *r45*(lea, alina).
F31: *r1*(patrick, theodor).
F32: *r45*(theodor, patrick).

F33: $r1(\text{theodor}, \text{leon})$.
F34: $r45(\text{leon}, \text{theodor})$.
F35: $r1(\text{vanessa}, \text{leon})$.
F36: $r45(\text{leon}, \text{vanessa})$.
F37: $r1(\text{jonathan}, \text{katharina})$.
F38: $r45(\text{katharina}, \text{jonathan})$.
F39: $r1(\text{jonathan}, \text{adam})$.
F40: $r45(\text{adam}, \text{jonathan})$.
F41: $r1(\text{valentina}, \text{nora})$.
F42: $r45(\text{nora}, \text{valentina})$.
F43: $r1(\text{valentina}, \text{emil})$.
F44: $r45(\text{emil}, \text{valentina})$.
F45: $r1(\text{stefan}, \text{nora})$.
F46: $r45(\text{nora}, \text{stefan})$.
F47: $r1(\text{stefan}, \text{emil})$.
F48: $r45(\text{emil}, \text{stefan})$.
F49: $r1(\text{selina}, \text{nico})$.
F50: $r45(\text{nico}, \text{selina})$.
F51: $r1(\text{selina}, \text{jonas})$.
F52: $r45(\text{jonas}, \text{selina})$.
F53: $r1(\text{selina}, \text{stefan})$.
F54: $r45(\text{stefan}, \text{selina})$.
F55: $r1(\text{marko}, \text{nico})$.
F56: $r45(\text{nico}, \text{marko})$.
F57: $r1(\text{marko}, \text{jonas})$.
F58: $r45(\text{jonas}, \text{marko})$.
F59: $r1(\text{marko}, \text{stefan})$.
F60: $r45(\text{stefan}, \text{marko})$.
F61: $r1(\text{helga}, \text{selina})$.
F62: $r45(\text{selina}, \text{helga})$.
F63: $r1(\text{simon}, \text{selina})$.
F64: $r45(\text{selina}, \text{simon})$.
F65: $r43(\text{michael})$.
F66: $r44(\text{angelina})$.
F67: $r43(\text{emil})$.

F68: $r43(\text{jonathan})$.

F69: $r44(\text{valentina})$.

F70: $r43(\text{stefan})$.

F71: $r44(\text{selina})$.

F72: $r43(\text{marko})$.

F73: $r44(\text{helga})$.

F74: $r43(\text{simon})$.

F75: $r44(\text{emily})$.

F76: $r44(\text{katharina})$.

F77: $r44(\text{nora})$.

F78: $r43(\text{jan})$.

F79: $r44(\text{magdalena})$.

F80: $r43(\text{matthias})$.

F81: $r43(\text{nico})$.

F82: $r43(\text{adam})$.

F83: $r44(\text{claudia})$.

F84: $r43(\text{sebastian})$.

F85: $r44(\text{alina})$.

F86: $r44(\text{lea})$.

F87: $r43(\text{patrick})$.

F88: $r43(\text{theodor})$.

F89: $r43(\text{jonas})$.

F90: $r44(\text{vanessa})$.

F91: $r43(\text{leon})$.

G1: $r20(\text{katharina}, \text{theodor})$

G2: $r20(\text{lea}, \text{theodor})$

Template: $\forall A, B, C, D, E, F : \#\#(A, B) \wedge \#\#(B, C) \wedge \#\#(C, D) \wedge \#\#(D, E) \wedge \#\#(E, F) \wedge ++(A) \rightarrow r20(A, F)$

Note that the symbol ‘ $\#\#$ ’ in the template should be filled with either ‘ $r1$ ’ or ‘ $r45$ ’, while the symbol ‘ $++$ ’ should be filled with either ‘ $r43$ ’ or ‘ $r44$ ’. After filling in the template, the generated rule is: