

I will give you a set of facts F1 to F90, facts G1 to G22 and a template for a logical rule. Please generate one single rule to match the template and logically entail the facts G1 to G22 based on facts F1 to F90.

Facts:

F1: *r1*(angelina, marcel).

F2: *r45*(marcel, angelina).

F3: *r1*(angelina, karin).

F4: *r45*(karin, angelina).

F5: *r1*(luca, marcel).

F6: *r45*(marcel, luca).

F7: *r1*(luca, karin).

F8: *r45*(karin, luca).

F9: *r1*(lara, valentina).

F10: *r45*(valentina, lara).

F11: *r1*(lara, charlotte).

F12: *r45*(charlotte, lara).

F13: *r1*(oskar, valentina).

F14: *r45*(valentina, oskar).

F15: *r1*(oskar, charlotte).

F16: *r45*(charlotte, oskar).

F17: *r1*(konstantin, lena).

F18: *r45*(lena, konstantin).

F19: *r1*(anna, oskar).

F20: *r45*(oskar, anna).

F21: *r1*(samuel, oskar).

F22: *r45*(oskar, samuel).

F23: *r1*(marcel, lara).

F24: *r45*(lara, marcel).

F25: *r1*(marcel, anastasia).

F26: *r45*(anastasia, marcel).

F27: *r1*(marcel, valerie).

F28: *r45*(valerie, marcel).

F29: *r1*(emilia, samuel).

F30: *r45*(samuel, emilia).

F31: *r1*(emilia, lisa).

F32: $r45(lisa, emilia)$.
F33: $r1(moritz, samuel)$.
F34: $r45(samuel, moritz)$.
F35: $r1(moritz, lisa)$.
F36: $r45(lisa, moritz)$.
F37: $r1(olivia, emilia)$.
F38: $r45(emilia, olivia)$.
F39: $r1(valentin, emilia)$.
F40: $r45(emilia, valentin)$.
F41: $r1(paula, lara)$.
F42: $r45(lara, paula)$.
F43: $r1(paula, anastasia)$.
F44: $r45(anastasia, paula)$.
F45: $r1(paula, valerie)$.
F46: $r45(valerie, paula)$.
F47: $r1(karin, daniel)$.
F48: $r45(daniel, karin)$.
F49: $r1(karin, leon)$.
F50: $r45(leon, karin)$.
F51: $r1(karin, beate)$.
F52: $r45(beate, karin)$.
F53: $r1(emma, angelina)$.
F54: $r45(angelina, emma)$.
F55: $r1(leo, angelina)$.
F56: $r45(angelina, leo)$.
F57: $r1(oliver, daniel)$.
F58: $r45(daniel, oliver)$.
F59: $r1(oliver, leon)$.
F60: $r45(leon, oliver)$.
F61: $r1(oliver, beate)$.
F62: $r45(beate, oliver)$.
F63: $r1(beate, lena)$.
F64: $r45(lena, beate)$.
F65: $r44(angelina)$.
F66: $r43(luca)$.

F67: $r_{43}(\text{marcel})$.
 F68: $r_{44}(\text{paula})$.
 F69: $r_{44}(\text{valerie})$.
 F70: $r_{44}(\text{karin})$.
 F71: $r_{44}(\text{emma})$.
 F72: $r_{43}(\text{leo})$.
 F73: $r_{43}(\text{oliver})$.
 F74: $r_{44}(\text{beate})$.
 F75: $r_{43}(\text{daniel})$.
 F76: $r_{43}(\text{leon})$.
 F77: $r_{44}(\text{lara})$.
 F78: $r_{43}(\text{oskar})$.
 F79: $r_{44}(\text{valentina})$.
 F80: $r_{43}(\text{konstantin})$.
 F81: $r_{44}(\text{lena})$.
 F82: $r_{44}(\text{anna})$.
 F83: $r_{43}(\text{samuel})$.
 F84: $r_{44}(\text{anastasia})$.
 F85: $r_{44}(\text{emilia})$.
 F86: $r_{43}(\text{moritz})$.
 F87: $r_{44}(\text{charlotte})$.
 F88: $r_{44}(\text{olivia})$.
 F89: $r_{43}(\text{valentin})$.
 F90: $r_{44}(\text{lisa})$.
 G1: $r_{22}(\text{angelina}, \text{emma})$
 G2: $r_{22}(\text{angelina}, \text{leo})$
 G3: $r_{22}(\text{lara}, \text{marcel})$
 G4: $r_{22}(\text{lara}, \text{paula})$
 G5: $r_{22}(\text{valentina}, \text{lara})$
 G6: $r_{22}(\text{valentina}, \text{oskar})$
 G7: $r_{22}(\text{lena}, \text{konstantin})$
 G8: $r_{22}(\text{lena}, \text{beate})$
 G9: $r_{22}(\text{anastasia}, \text{marcel})$
 G10: $r_{22}(\text{anastasia}, \text{paula})$
 G11: $r_{22}(\text{emilia}, \text{olivia})$

G12: $r22(\text{emilia}, \text{valentin})$

G13: $r22(\text{charlotte}, \text{lara})$

G14: $r22(\text{charlotte}, \text{oskar})$

G15: $r22(\text{lisa}, \text{emilia})$

G16: $r22(\text{lisa}, \text{moritz})$

G17: $r22(\text{valerie}, \text{marcel})$

G18: $r22(\text{valerie}, \text{paula})$

G19: $r22(\text{karin}, \text{angelina})$

G20: $r22(\text{karin}, \text{luca})$

G21: $r22(\text{beate}, \text{karin})$

G22: $r22(\text{beate}, \text{oliver})$

Template: $\forall A, B : \#\#(A, B) \wedge ++(A) \rightarrow r22(A, B)$

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: