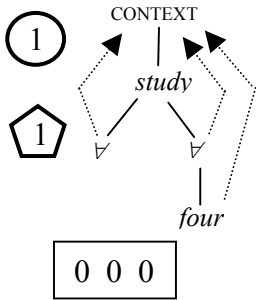


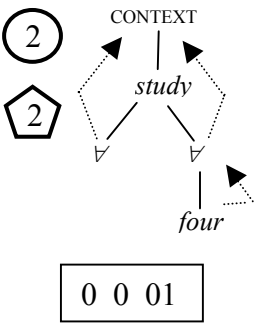
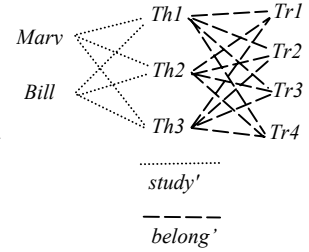
## THE FIVE INTERPRETATIONS OF THE SENTENCE

*All students studied all theorems of four theories*



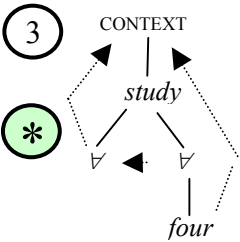
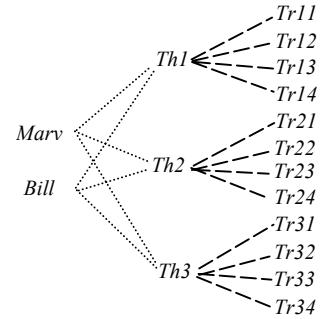
*All theorems that belong to a well-defined group of four theories (Tr1, Tr2, Tr3, Tr4) are studied by all (relevant) students.*

$$\begin{aligned} &\exists_{z1}\exists_{z2}\exists_{z3}\exists_{z4} \\ &[z1 \neq z2 \neq z3 \neq z4 \wedge \\ &\forall_z [(z=z1 \vee z=z2 \vee z=z3 \vee z=z4) \rightarrow \text{theory}'(z)] \wedge \\ &\forall_x \forall_y [(\text{student}'(x) \wedge \text{theorem}'(y) \wedge \\ &\quad \forall_z [(z=z1 \vee z=z2 \vee z=z3 \vee z=z4) \rightarrow \text{belong}'(y, z)]) \rightarrow \\ &\quad \text{study}'(x, y)] \end{aligned}$$



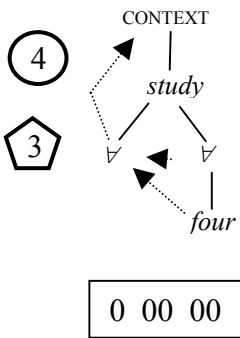
*All (relevant) students studied all theorems such that each of them belongs to at least four theories.*

$$\begin{aligned} &\forall_x \forall_y [(\text{student}'(x) \wedge \text{theorem}'(y) \wedge \\ &\quad \exists_{z1}\exists_{z2}\exists_{z3}\exists_{z4} [z1 \neq z2 \neq z3 \neq z4 \wedge \\ &\quad \quad \forall_z [(z=z1 \vee z=z2 \vee z=z3 \vee z=z4) \rightarrow \text{theory}'(z)] \wedge \\ &\quad \quad \forall_z [(z=z1 \vee z=z2 \vee z=z3 \vee z=z4) \rightarrow \text{belong}'(y, z)])] \rightarrow \\ &\quad \text{study}'(x, y)] \end{aligned}$$



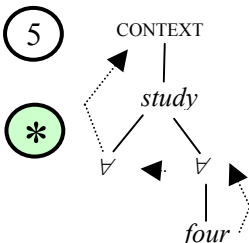
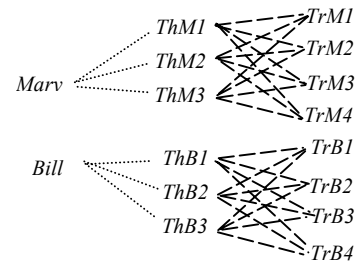
*Conflates in 1.*

$$0 \ 00 \ 0$$



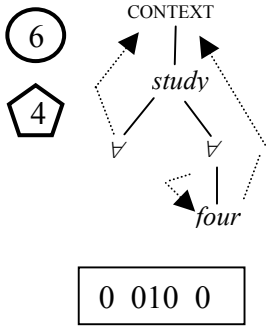
*All (relevant) students chose four theories (TrM1, TrM2, TrM3, TrM4, TrB1, TrB2, TrB3, TrB4), and studied all theorems that belong to all of the theories s/he chose.*

$$\begin{aligned} &\forall_x [\text{student}'(x) \rightarrow \\ &\quad \exists_{z1}\exists_{z2}\exists_{z3}\exists_{z4} [z1 \neq z2 \neq z3 \neq z4 \wedge \\ &\quad \quad \forall_z [(z=z1 \vee z=z2 \vee z=z3 \vee z=z4) \rightarrow \text{theory}'(z)] \wedge \\ &\quad \quad \forall_y [(\text{theorem}'(y) \wedge \\ &\quad \quad \quad \forall_z [(z=z1 \vee z=z2 \vee z=z3 \vee z=z4) \rightarrow \\ &\quad \quad \quad \quad \text{belong}'(y, z)]) \rightarrow \\ &\quad \quad \text{study}'(x, y)]] \end{aligned}$$

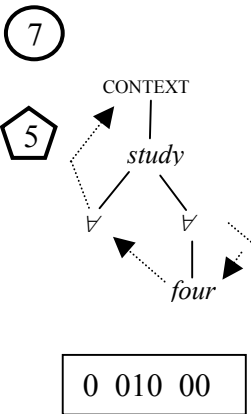
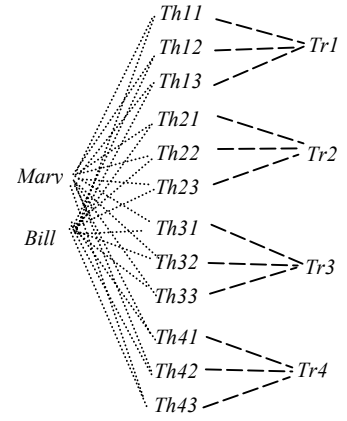


*Conflates in 2.*

$$0 \ 00 \ 01$$

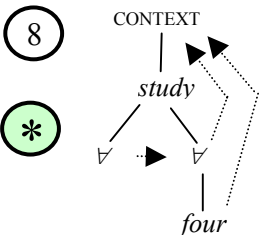
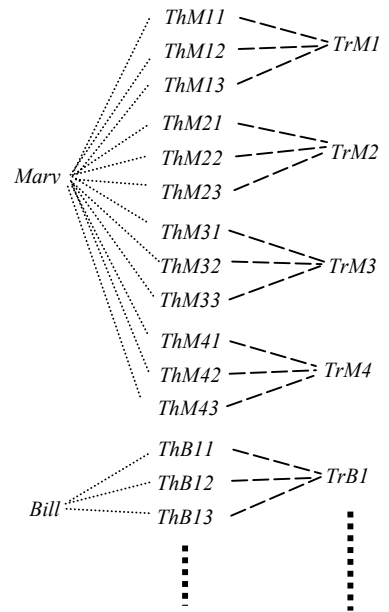


$$\exists z_1 \exists z_2 \exists z_3 \exists z_4 [z_1 \neq z_2 \neq z_3 \neq z_4 \wedge \forall z [(z=z_1 \vee z=z_2 \vee z=z_3 \vee z=z_4) \rightarrow \text{theory}'(z)] \wedge \forall z [(z=z_1 \vee z=z_2 \vee z=z_3 \vee z=z_4) \rightarrow \forall x \forall y [(student'(x) \wedge \text{theorem}'(y) \wedge \text{belong}'(y,z)) \rightarrow \text{study}'(x,y)]]]$$



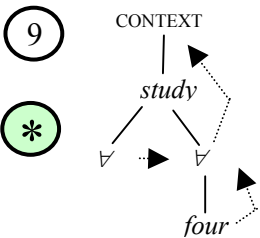
For all the (relevant) students there are four theories. Each student studies all theorems that belong to any of the theories associated with her/him.

$$\forall x [student'(x) \rightarrow \exists z_1 \exists z_2 \exists z_3 \exists z_4 [z_1 \neq z_2 \neq z_3 \neq z_4 \wedge \forall z [(z=z_1 \vee z=z_2 \vee z=z_3 \vee z=z_4) \rightarrow \text{theory}'(z)] \wedge \forall z [(z=z_1 \vee z=z_2 \vee z=z_3 \vee z=z_4) \rightarrow \forall y [(theorem'(y) \wedge \text{belong}'(y,z)) \rightarrow \text{study}'(x,y)]]]]]$$



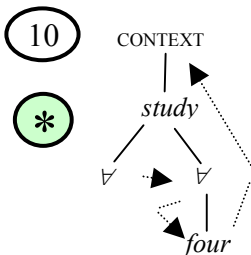
Conflates in 1.

$$01\ 0\ 0$$



Conflates in 2.

$$01\ 0\ 01$$

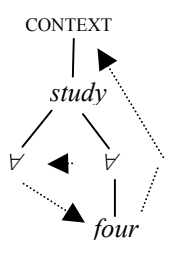


Conflates in 6.

$$01\ 010\ 0$$

11

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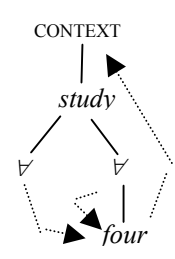


Conflates in 6.

010 00 0

12

\*

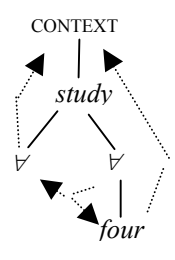


Conflates in 6.

010 010 0

13

\*



Conflates in 6.

010 00+010 0