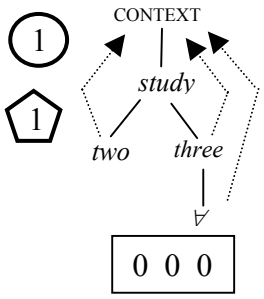
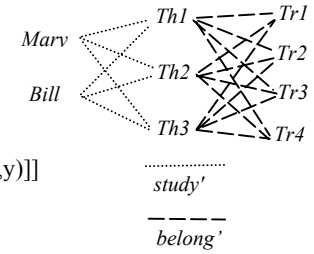
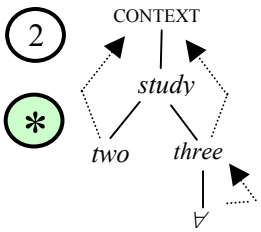
THE EIGHT INTERPRETATIONS OF THE SENTENCE
Two students studied three theorems of all theories



There are two students (Mary and Bill) each of which studied three theorems that belong to all (relevant) theories (Tr1, Tr2, Tr3, Tr4).

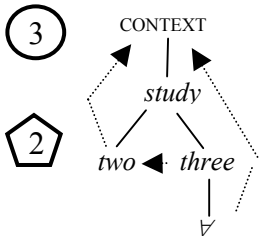
$\exists_{x1}\exists_{x2}\ \exists_{y1}\exists_{y2}\exists_{y3}$
$[x1\neq x2 \wedge y1\neq y2\neq y3 \wedge$
$\forall_x [(x = x1 \vee x = x2) \rightarrow student'(x)] \wedge$
$\forall_y [(y=y1 \vee y=y2 \vee y=y3) \rightarrow$
$(theorem'(y) \wedge \forall_z [theory'(z) \rightarrow belong'(y, z)])] \wedge$
$\forall_x\forall_y [((y=y1 \vee y=y2 \vee y=y3) \wedge (x=x1 \vee x=x2)) \rightarrow study'(x,y)]]$





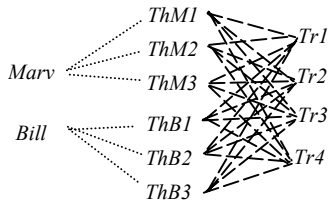
Conflates in 1.

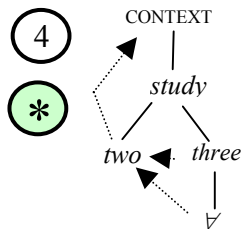
0 0 01



There are two students (Mary and Bill) who chose three theorems belonging to all relevant theories and studied them; they may choose different theorems.

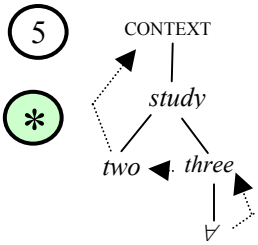
$\exists_{x1}\exists_{x2} [x1\neq x2 \wedge$
$\forall_x [(x = x1 \vee x = x2) \rightarrow student'(x)] \wedge$
$\forall_x [(x = x1 \vee x = x2) \rightarrow$
$\exists_{y1}\exists_{y2}\exists_{y3} [y1\neq y2\neq y3 \wedge$
$\forall_y [(y=y1 \vee y=y2 \vee y=y3) \rightarrow$
$(theorem'(y) \wedge$
$\forall_z [theory'(z) \rightarrow belong'(y, z)])] \wedge$
$\forall_y [(y=y1 \vee y=y2 \vee y=y3) \rightarrow study'(x, y)]]]]$





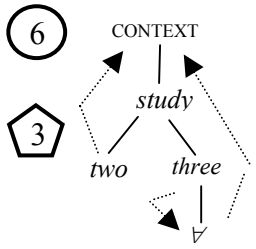
Conflates in 3.

0 00 00



Conflates in 3.

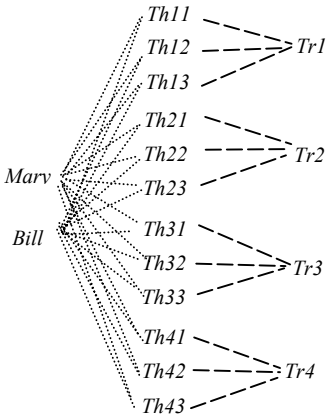
0 00 01

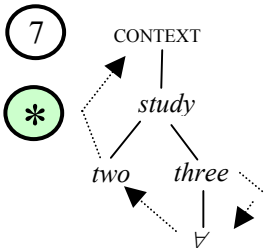


0 010 0

There are two students (Mary and Bill) and, for each (relevant) theory, three theorems that belong to it. Each student studies all those theorems

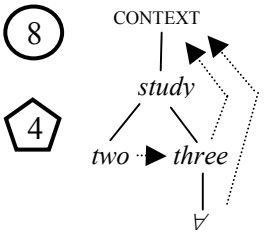
$\exists_{x1}\exists_{x}$ [x1≠x2 ∧
$\forall_{x}$ [(x = x1 ∨ x = x2) → student'(x)] ∧
$\forall_{z}$ [theory'(z) →
$\exists_{y1}\exists_{y2}\exists_{y3}$ [y1≠y2≠y3 ∧
$\forall_{y}$ [(y=y1 ∨ y=y2 ∨ y=y3) →
(theorem'(y) ∧ belong'(y,z))] ∧
$\forall_{x}\forall_{y}$ [((y=y1 ∨ y=y2 ∨ y=y3) ∧ (x=x1 ∨x = x2))
→ study'(x, y)]]]]





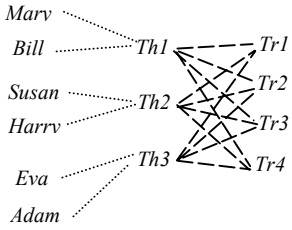
Conflates in 6.

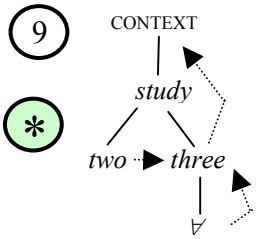
0 010 00



There are three theorems (Th1, Th2 and Th3) that belong to all of the (relevant) theories, and for each theorem there are two students, possibly different, who study it.

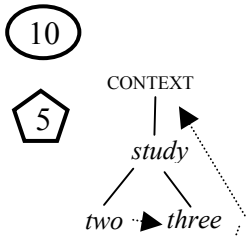
$\exists_{y1}\exists_{y2}\exists_{y3}$ [y1≠y2≠y3 ∧
$\forall_{y}$ [(y=y1 ∨ y=y2 ∨ y=y3) →
(theorem'(y)] ∧ $\forall_{z}$ [theory'(z) → belong'(y, z)])] ∧
$\forall_{y}$ [(y=y1 ∨ y=y2 ∨ y=y3) →
$\exists_{x1}\exists_{x2}$ [x1≠x2 ∧
$\forall_{x}$ [(x = x1 ∨ x = x2) → student'(x)] ∧
$\forall_{x}$ [(x = x1 ∨ x = x2) → study'(x, y)]]]]





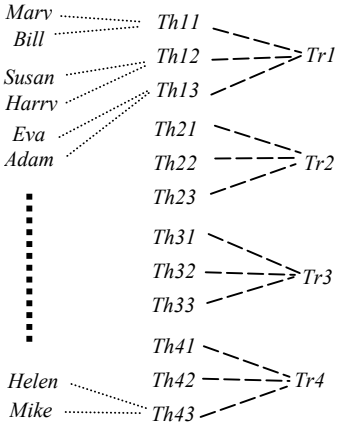
Conflates in 8.

01 0 01



For each (relevant) theory there are three, possibly different, theorems. For each theorem, there are two, possibly different, students who study it.

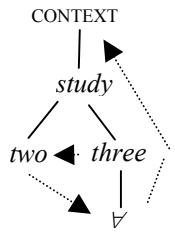
$\forall_{z}$ [theory'(z) →
$\exists_{y1}\exists_{y2}\exists_{y3}$ [y1≠y2≠y3 ∧
$\forall_{y}$ [(y=y1 ∨ y=y2 ∨ y=y3) →
(theorem'(y) ∧ belong'(y, z))] ∧
$\forall_{y}$ [(y=y1 ∨ y=y2 ∨ y=y3) →
$\exists_{x1}\exists_{x2}$ [x1≠x2 ∧
$\forall_{x}$ [(x = x1 ∨ x = x2) → student'(x)] ∧
$\forall_{x}$ [(x = x1 ∨ x = x2) → study'(x, y)]]]]]



01 010 0

11

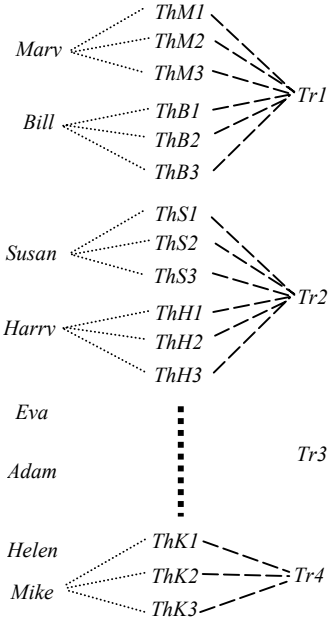
6



010 00 0

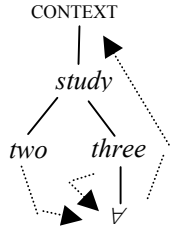
For each (relevant) theory there are two, possibly different, students (who chose them). For each student, there are three, possibly different, theorems who are studied by that student.

$\forall_z$ [theory'(z) →
  $\exists_{x1}\exists_{x2}$ [x1≠x2 ∧
    $\forall_x$ [(x = x1 ∨ x = x2) → student'(x)] ∧
    $\forall_x$ [(x = x1 ∨ x = x2) →
      $\exists_{y1}\exists_{y2}\exists_{y3}$ [y1≠y2≠y3 ∧
        $\forall_y$ [(y=y1 ∨ y=y2 ∨ y=y3) →
          (theorem'(y) ∧ belong'(y, z))] ∧
        $\forall_y$ [(y=y1 ∨ y=y2 ∨ y=y3) →
          study'(x, y)]]]]]



12

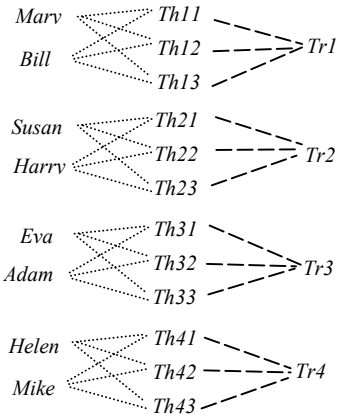
7



010 010 0

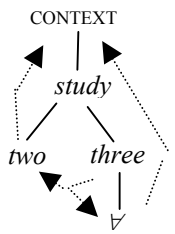
For each (relevant) theory there are two, possibly different, students (who chose them) and three, possibly different, theorems. Each student who chose a given theory studies all the theorems of that theory.

$\forall_z$ [theory'(z) →
  $\exists_{x1}\exists_{x2}$ $\exists_{y1}\exists_{y2}\exists_{y3}$ [x1≠x2 ∧ y1≠y2≠y3 ∧
    $\forall_x$ [(x = x1 ∨ x = x2) → student'(x)] ∧
    $\forall_y$ [(y=y1 ∨ y=y2 ∨ y=y3) →
      (theorem'(y) ∧ belong'(y, z))] ∧
    $\forall_x\forall_y$ [((x = x1 ∨ x = x2) ∧
      (y=y1 ∨ y=y2 ∨ y=y3)) →
      study'(x, y)]]]



13

8



010 00+010 0

There are two students. Each student chooses three theorems that belong to any of the (relevant) theories and studies them.

$\exists_{x1}\exists_{x2}$ [x1≠x2 ∧
  $\forall_x$ [(x = x1 ∨ x = x2) → student'(x)] ∧
  $\forall_x\forall_z$ [(x = x1 ∨ x = x2) ∧ theory'(z)) →
    $\exists_{y1}\exists_{y2}\exists_{y3}$ [y1≠y2≠y3 ∧
      $\forall_y$ [(y=y1 ∨ y=y2 ∨ y=y3) →
        (theorem'(y) ∧ belong'(y, z))] ∧
      $\forall_y$ [(y=y1 ∨ y=y2 ∨ y=y3) → study'(x, y)]]]]