Phi 270 F99 test 4

Analyze the following sentences in as much detail as possible, providing a key to the non-logical vocabulary (upper and lower case letters) appearing in your answer.

- Sam invited every vertebrate to the party, but only people accepted his invitation answer
- 2. Tom didn't send anything to the printer answer
- 3. No game that every child liked was complete answer

Synthesize an English sentence whose analysis would yield the following form.

4. (∀x: Px) (∀y: Ry ∧ Txy) Sy P: [_ is a person]; R: [_ is a room]; S: [_ was reserved]; T: [_ thought of _] answer

Use derivations to establish the validity of the following arguments. You may use attachment rules.

5.
$$\frac{\forall x (Fx \to Gx)}{\forall x Fx \to \forall x Gx}$$

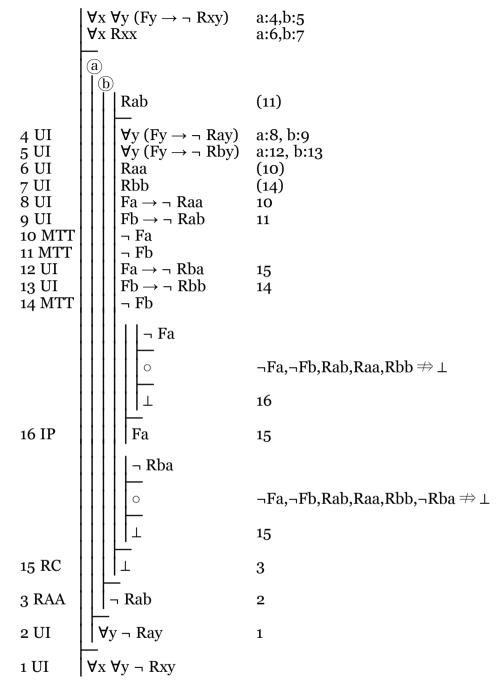
answer
6.
$$\forall x \forall y (Fyx \to \neg Py)$$

$$\frac{\forall x \ \forall y \ (Fyx \rightarrow \neg Fy)}{\forall x \ (Px \rightarrow \forall y \neg Fxy)}$$

7. Use a derivation to show that the following argument is not valid and describe a structure (by using either a diagram or tables) that divides one of the derivation's open gaps.

Phi 270 F99 test 4 answers

Sam invited every vertebrate to the party, but only people 1. accepted his invitation Sam invited every vertebrate to the party \wedge only people accepted Sam's invitation every vertebrate is such that (Sam invited it to the party) \wedge only people are such that (they accepted Sam's invitation) $(\forall x: \underline{x} \text{ is a vertebrate})$ Sam invited \underline{x} to the party $\land (\forall x: \neg \underline{x} \text{ is a})$ person) $\neg \underline{x}$ accepted Sam's invitation $(\forall x: Vx)$ Isxp \land $(\forall x:\neg Px) \neg$ Ax(Sam's invitation) $(\forall x: Vx)$ Isxp \land $(\forall x: \neg Px) \neg$ Ax(is) A: [_ accepted _]; I: [_ invited _ to _]; P: [_ is a person]; V: [is a vertebrate]; i: ['s invitation]; p: the party; s: Sam Tom didn't send anything to the printer 2. everything is such that (Tom didn't send it to the printer) $\forall x \text{ Tom didn't send } x \text{ to the printer}$ $\forall x \neg$ Tom sent <u>x</u> to the printer $\forall x \neg Stxp$ S: [_ sent _ to _]; p: the printer; t: Tom No game that every child liked was complete 3. No game that every child liked is such that (it was complete) $(\forall x: x \text{ was a game that every child liked}) \neg x \text{ was complete}$ $(\forall x: x \text{ was a game } \land \text{ every child liked } x) \neg Cx$ $(\forall x: x \text{ was a game } \land \text{ every child is such that (he or she liked x)})$ ¬ Cx $(\forall x: Gx \land (\forall y: y \text{ was a child}) y \text{ liked } x) \neg Cx$ $(\forall x: Gx \land (\forall y: Dy) Lyx) \neg Cx$ C: [was complete]; D: [was a child]; G: [was a game]; L: [_ liked _] 4. $(\forall x: x \text{ is a person}) (\forall y: y \text{ is a room } \land x \text{ thought of } y) y \text{ was}$ reserved $(\forall x: x \text{ is a person})$ ($\forall y: y \text{ is a room } x \text{ thought of}) y \text{ was reserved}$ $(\forall x: x \text{ is a person})$ every room x thought of was such that (it was reserved) $(\forall x: x \text{ is a person})$ every room x thought of was reserved everyone is such that (every room he or she thought of was reserved) every room anyone thought of was reserved



7.

The structure below divides both gaps

