Phi 270 F98 part of quiz 4 and all of quiz 5 (of 6)

(questions from these two tests addressed the part of the course your test is designed to cover)

4-5. Identify individual terms and quantifier phrases in the following sentence and indicate links between pronouns and their antecedents. (You can do this by marking up an English sentence; you are *not* being asked to provide a symbolic analysis.)

Sam ordered a book, but instead of it he received a book he didn't want.

[answer]

4-6. Analyze the following generalization in as much detail as possible. Provide a key to the non-logical vocabulary (upper and lower case letters) appearing in your answer.

No one saw the book that was lying on the table.

[answer]

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.

5-1. *No one except numismatists understood the joke*

[answer]

5-2. *The movie delighted all boys and girls*

[answer]

5-3. *If anyone relayed the message to everyone, then no one understood every part of it*

[answer]

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

5-4. $\forall x\ (Fx \vee Gx)$

$\forall x \neg Gx$

$\forall x\ Fx$

[answer]

5-5. $(\forall x\text{: } Fx)\ (\forall y\text{: } Pxy)\ Rxy$

$\forall y\ (\forall x\text{: } Fx \wedge Pxy)\ Rxy$

[answer]

5-6. Use a derivation to show that the following argument is not valid and describe a structure dividing one of the derivation's open gaps.

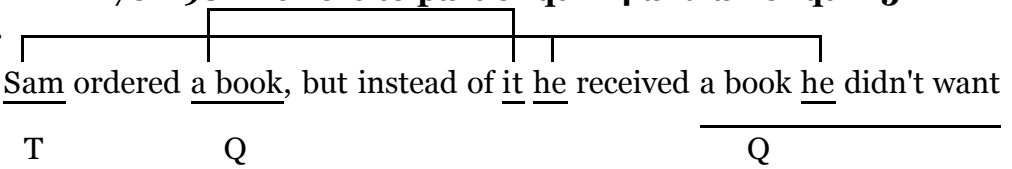
$(\forall x\text{: } Fx) \neg Rxx$

$\forall x\ (\forall y\text{: } Fy) \neg Rxy$

[answer]

Phi 270 F98 Answers to part of quiz 4 and all of quiz 5

4-5.



4-6. *No one saw the book that was lying on the table*.

No one is such that (he or she saw the book that was lying on the

table)
(∀x: x *is a person*) ¬ x *saw* *the book that was lying on the table*
(∀x: Px) ¬ Sx(*the book that was lying on* *the table*)
(∀x: Px) ¬ Sx(bt)
[P: λx (x *is a person*); S: λxy (x *saw* y); b: λx (*the book that was lying on* x); t: *the table*]

5-1. *No one except numismatists understood the joke*
(∀x: x *is a person* ∧ ¬ x *is a numismatist*) ¬ x *understood* *the joke*
(∀x: Px ∧ ¬ Nx) ¬ Uxj
[N: λx (x *is a person*); P: λx (x *is a numismatist*); U: λxy (x *understood* y); j: *the joke*]

5-2. *The movie delighted all boys and girls*
all boys and girls are such that (the movie delighted them)
(∀x: x *is a boy or girl*) *the movie delighted* x
(∀x: x *is a boy* ∨ x *is a girl*) *the movie* *delighted* x
(∀x: Bx ∨ Gx) Dmx
[B: λx (x *is a boy*); D: λxy (x *delighted* y); G: λx (x *is a girl*); m: *the movie*]

5-3. *If anyone relayed the message to everyone, then no one understood every part of it*
(∀x: x *is a person*) *if* x *relayed the message to everyone, then no one understood every part of it*
(∀x: Px) (x *relayed the message to everyone* → *no one understood every part of the message*)
(∀x: Px) ((∀y: y *is a person*) x *relayed the message to* y → (∀z: z *is a person*) ¬ z *understood every part of the message*)
(∀x: Px) ((∀y: Py) x *relayed* *the message* *to* y → (∀z: Pz) ¬ (∀w: w *is a part of* *the message*) z *understood* w)
(∀x: Px) ((∀y: Py) Rxmy → (∀z: Pz) ¬ (∀w: Twm) Uzw)
[P: λx (x *is a person*); R: λxyz (x *relayed* y *to* z); T: λxy (x *is a part of* y); U: λxy (x *understood* y); m: *the message*]

5-4.

	∀x (Fx ∨ Gx)	a:2
	∀x ¬ Gx	a:3
	ⓐ	
2 UI	Fa ∨ Ga	4
3 UI	¬ Ga	(4)
4 MTP	Fa	(5)
	•	
5 QED	Fa	1
1 UG	∀x Fx	

5-5.

	(∀x: Fx) (∀y: Pxy) Rxy	b:4
	ⓐ	
	ⓑ	
	Fb ∧ Pba	3
3 Ext	Fb	(4)
3 Ext	Pba	(5)
4 SB	(∀y: Pby) Rby	a:5
5 SB	Rba	(6)
	●	
6 QED	Rba	2
2 RIG	(∀x: Fx ∧ Pxa) Rxa	1
1 UG	∀y (∀x: Fx ∧ Pxy) Rxy	

5-6.

	(∀x: Fx) ¬ Rxx	b:4,a:5
	ⓐ	
	ⓑ	
	Fb	(4)
	Rab	
4 SB	¬ Rbb	
	¬ Fa	
	○	Fb,Rab,¬Rbb,¬Fa ⇏ ⊥
	⊥	6
6 IP	Fa	5
	¬ Raa	
	○	Fb,Rab,¬Rbb,¬Raa ⇏ ⊥
	⊥	5
5 MCR	⊥	3
3 RAA	¬ Rab	2
2 RUG	(∀y: Fy) ¬ Ray	1
1 UG	∀x (∀y: Fy) ¬ Rxy	

This structure divides both gaps: