PHIL07 Midterm Exam

Section 1:	1: Indicate whether the following claims are true ("T") or false ("F") [5 pts each]			
1.	Some unsound arguments have a true conclusion	T		
2.	Every invalid argument has a false premise	F		
3.	If an argument has true premises and a true conclusion then it is sound.	, F		
Section 2:	Indicate whether the following expressions are WFFs (' [5 pts each]	"yes") or not ("no")		
1.	(~(P & P) & (P <-> (Q v ~Q)))	Y		
2.	(~(P v (Q & R)))	N		

Section 3: Using the translation scheme below, translate the following sentences from English to the language of propositional logic. Your translation must be a WFF. [10 pts each]

- A = The Cleveland pitcher throws at someone again
- B = The Cleveland pitcher is out of the game
- C = The Cleveland manager is out of the game
- D= The Detroit pitcher throws at someone again
- E = The Detroit pitcher is out of the game
- F = The Detroit manager is out of the game
- 1. If the Detroit pitcher throws at someone again, then both he and the Cleveland manager will be out of the game.

(D->(E&C))

2. The Cleveland pitcher isn't out of the game, but if he throws at someone again his manager will be out of the game.

(~B&(A->C))

3. Provided that neither pitcher throws at someone again, neither manager will be thrown out of the game.

(~(AvD)->~(CvF)) OR ((~A&~D)->(~C&~F))

Section 4: Construct proofs for each of the following sequents. [15 pts. each—5 pts allocated for correct notation, 10 pts for a correct and complete proof]

1. (P < ->Q) ->R, P ->Q, Q ->P - R

1	(1)	(P<->Q)->R	A
2	(2)	P->Q	A
3	(3)	Q->P	A
2,3	(4)	P<->Q	2,3<->I
1,2,3	(5)	R	1,4->E

~P, ((PvQ)<->(Rv~P)) - Q

1	(1)	~P	А
2	(2)	(PvQ)<->(Rv~P)	A
2	(3)	(Rv~P)->(PvQ)	2<->E
1	(4)	Rv~P	lvI
1,2	(5)	PvQ	3,4->E
1,2	(6)	Q	1,5vE

3.
$$|-((\sim P - > P) < -> P)|$$

1	(1)	P	A
2	(2)	~P	A
1	(3)	~P->P	1->I(2)
	(4)	P->(~P->P)	3->I(1)
5	(5)	~P->P	A
б	(6)	~P	A
5,6	(7)	P	5,б->Е
5	(8)	P	6,7RAA(6)
	(9)	(~P->P)->P	8->I(5)
	(10)	(~P->P)<->P	4,9<->I

E.C.:						
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