Name (PRINTED): _____

Student ID #: _____

Section # (or TA's: name and time) _____

CMSC 250 Quiz #3 Wednesday, Sept. 15, 2004

1. [12 pnts.] Prove that the following argument is valid by using the rules. Apply only the rules from Theorem 1.1.1 and Table 1.3.1 and the other things listed on the "cheat sheet". You must tell the name of the rule as you apply it and what line numbers contained the statements used to apply the rule.

P1	$q \vee \sim p$
P2	$r \rightarrow \sim q$
P3	$p \rightarrow r$
	therefore $\sim p$

#	Statement	Rule	Lines Used
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

↓ TURN OVER ↓

2. [12 pnts.] Prove that the following argument is valid by using the rules. Apply only the rules from Theorem 1.1.1 and Table 1.3.1 and the other things listed on the "cheat sheet". You must tell the name of the rule as you apply it and what line numbers contained the statements used to apply the rule.

P1	$p \vee r$
P2	$\sim (q \wedge \sim r)$
	therefore $(p \rightarrow q) \rightarrow r$

#	Statement	Rule	Lines Used
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

3. [6 pnts.] For each of the following identify the ONE SINGLE rule being applied or tell that it is not one of those listed on the "cheat sheet".

a.

If I stay up late at night, then I will be tired in the morning. I am not tired this morning.	
Therefore I did not stay up late last night.	

b.

Either I study or I like football. If I like football, then I like mathematics.	
If I don't study, then I like mathematics.	

c.

If I work hard, then I earn lots of money. If I earn lots of money, then I pay high taxes.	
If I pay high taxes, then I have worked hard.	