Ricardo Barbosa

CST 329

Homework 4 Proofs Part 1

6.7

Check Your Proof:

Proof: Repository - hw6.7

Construct a proof for the argument: $P \wedge Q \therefore P \vee Q$

1	$P \wedge Q$		
2	$\quad \neg(P \vee Q)$		
3	$\quad P$	1 Simplification	
4	$\quad Q$	1 Simplification	
5	$\quad P \vee Q$	3 Addition	
6	$\quad \neg(P \vee Q)$	2 Repeat	
7	$P \vee Q$	2–6 Reductio Ad Absurdum	

new line new subproof

Congratulations! This proof is correct.

check proof start over

Clear & Start a new Proof

6.8

Check Your Proof:

Proof: Repository - hw6.8

Construct a proof for the argument: $Q \vee P \therefore \neg Q \rightarrow P$

1	$Q \vee P$	
2	$\neg Q$	
3	P	1, 2 Modus Tollendo Ponens
4	$\neg Q \rightarrow P$	2–3 Conditional derivation

new line new subproof

Congratulations! This proof is correct.

check proof start over

Clear & Start a new Proof

6.9

Check Your Proof:

Proof: Repository - hw6.9

Construct a proof for the argument: $P \rightarrow Q, \neg Q \wedge S, R \vee P \therefore S \wedge R$

1	$P \rightarrow Q$	
2	$\neg Q \wedge S$	
3	$R \vee P$	
4	S	2 Simplification
5	$\neg Q$	2 Simplification
6	$\neg P$	1, 5 Modus Tollens
7	R	3, 6 Modus Tollendo Ponens
8	$S \wedge R$	4, 7 Adjunction

new line new subproof

Congratulations! This proof is correct.

check proof start over

Clear & Start a new Proof

6.10

Check Your Proof:

Proof: Repository - hw6.10

Construct a proof for the argument: $(P \wedge Q) \vee R, (P \wedge Q) \rightarrow S, \neg S \therefore R$

1	$(P \wedge Q) \vee R$	
2	$(P \wedge Q) \rightarrow S$	
3	$\neg S$	
4	$\neg(P \wedge Q)$	2, 3 Modus Tollens
5	R	1, 4 Modus Tollendo Ponens

new line new subproof

Congratulations! This proof is correct.

check proof start over

Clear & Start a new Proof