Yavik Kapadia

Proof: Repository - hw6.1

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

1	$P \rightarrow (R \rightarrow S)$	
2	$\neg S \wedge P$	
3	$\neg S$	Simplification 2
4	P	Simplification 2
5	$(R \rightarrow S)$	Modus Ponens 4, 1
6	$\neg R$	Modus Tollens 3, 5

new line new subproof

Congratulations! This proof is correct.

check proof start over

Clear & Start a new Proof

Proof: Repository - hw6.2

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

1	$(R \rightarrow \neg P) \wedge (\neg S \rightarrow \neg R)$	
2	R	
3	$R \rightarrow \neg P$	Simplification 1
4	$\neg S \rightarrow \neg R$	Simplification 1
5	$\neg P$	Modus Ponens 2, 3
6	$\neg\neg R$	Double Negation 2
7	$\neg\neg S$	Modus Tollens 6, 4
8	S	Double Negation 7
9	$S \wedge \neg P$	Adjunction 5, 8

new line new subproof

Congratulations! This proof is correct.

check proof start over

Proof: Repository - hw6.3

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

1	$P \rightarrow Q$		
2	$P \rightarrow (Q \rightarrow R)$		
3	P	click to edit	
4	Q	Modus Ponens 1, 3	×
5	$Q \rightarrow R$	Modus Ponens 2, 3	
6	R	Modus Ponens 4, 5	
7	$P \rightarrow R$	Conditional derivation 3–6	

new line new subproof

Congratulations! This proof is correct.

check proof start over

Proof: Repository - hw6.4

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

1	$P \rightarrow Q$	
2	$S \rightarrow R$	
3	$\neg Q \wedge \neg R$	
4	$\neg Q$	Simplification 3
5	$\neg R$	Simplification 3
6	$\neg P$	Modus Tollens 1, 4
7	$\neg S$	Modus Tollens 5, 2
8	$\neg P \wedge \neg S$	Adjunction 6, 7
9	$(\neg Q \wedge \neg R) \rightarrow (\neg P \wedge \neg S)$	Conditional derivation 3–8

new line new subproof

Congratulations! This proof is correct.

check proof start over

Proof: Repository - hw6.5

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

1	$P \rightarrow (S \rightarrow R)$	
2	$P \rightarrow (Q \rightarrow S)$	
3	P	
4	Q	
5	$Q \rightarrow S$	Modus Ponens 2, 3
6	S	Modus Ponens 4, 5
7	$S \rightarrow R$	Modus Ponens 1, 3
8	R	Modus Ponens 6, 7
9	$Q \rightarrow R$	Conditional derivation 4–8
10	$P \rightarrow (Q \rightarrow R)$	Conditional derivation 3–9

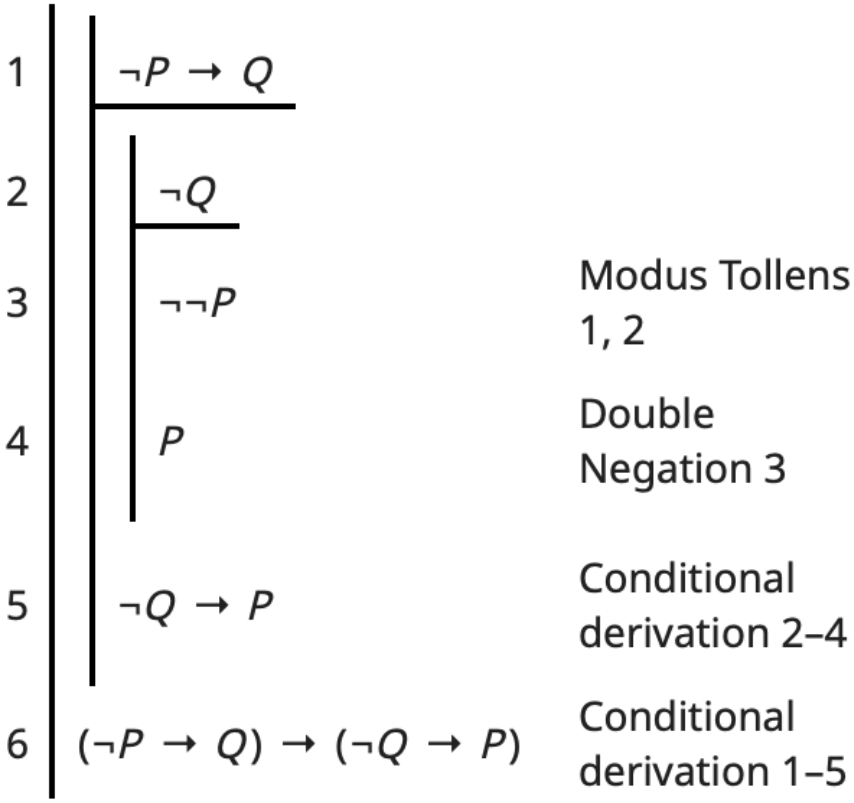
new line new subproof

Congratulations! This proof is correct.

check proof start over

Proof: Repository - hw6.6

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



new line new subproof

Congratulations! This proof is correct.

check proof start over

Proof: Repository - hw7.2

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

1	$P \rightarrow [Q \rightarrow (R \rightarrow S)]$	
2	$Q \wedge R$	
3	P	
4	Q	Simplification 2
5	R	Simplification 2
6	$[Q \rightarrow (R \rightarrow S)]$	Modus Ponens 1, 3
7	$R \rightarrow S$	Modus Ponens 4, 6
8	S	Modus Ponens 5, 7
9	$P \rightarrow S$	Conditional derivation 3–8

new line new subproof

Congratulations! This proof is correct.

check proof start over