

Proofs IV

Construct proofs for each of the following arguments using conditional proof or indirect proof. You may use the [General Purpose Proof Form for PL](#) or do proofs the good old-fashioned way.

Use conditional proof:

1. $A \text{ /// } (E \supset E)$
2. $C \supset (D \vee E), \sim(D \vee F) \text{ /// } C \supset (E \vee G)$
3. $[P \vee (\sim S \vee \sim Q)] \supset \sim R \text{ /// } \sim R \vee S$
4. $(Q \vee S), (P \supset \sim Q), (P \vee R) \text{ /// } \sim R \supset S$
5. $(A \ \& \ B) \equiv C, A \supset B \text{ /// } A \equiv C$
6. $A \text{ /// } (B \supset C) \supset ((A \supset B) \supset C)$
7. $(A \supset B) \ \& \ (B \supset D) \text{ /// } (A \ \& \ B) \supset (C \vee D)$
8. $B \supset (\sim S \vee D), \sim L \vee S, B \supset L \text{ /// } B \supset D$

Use indirect proof:

1. $(A \ \& \ B) \supset (D \vee C), E \supset A, E \vee (A \ \& \ B) \text{ /// } A \vee (D \vee C)$
2. $\sim A \equiv B, \sim(A \vee E) \text{ /// } B$
3. $M \supset (\sim S \supset U), (M \supset S) \supset U \text{ /// } U$
4. $\sim(S \supset \sim T), (L \vee (R \ \& \ \sim S)) \text{ /// } L$
5. $L \supset (R \ \& \ S) \text{ /// } (\sim S \supset \sim L)$

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