

# Introduction to Logic

## Problem 3.2 - Fitch System

Given  $((p \Rightarrow q) \Rightarrow r)$ , use the Fitch system to prove  $((p \Rightarrow q) \Rightarrow (p \Rightarrow r))$ . Apply rules of inference by checking the lines you wish to use as premises and click the button for the desired rule of inference. Reiteration allows you to repeat an earlier item. To delete one or more lines from a proof, check the desired lines and click Delete. Whenever entering expressions, use Ascii characters only. Use  $\sim$  for  $\neg$ ; use  $\&$  for  $\wedge$ ; use  $|$  for  $\vee$ ; use  $\Rightarrow$  for  $\Rightarrow$ ; and use  $\Leftrightarrow$  for  $\Leftrightarrow$ .

Proof Editor		
1.	$(p \Rightarrow q) \Rightarrow r$	Premise
2.	$p \Rightarrow q$	Assumption
3.	$p$	Assumption
4.	$r$	Implication Elimination: 1, 2
5.	$p \Rightarrow r$	Implication Introduction: 4
6.	$(p \Rightarrow q) \Rightarrow (p \Rightarrow r)$	Implication Introduction: 5
Goal	$(p \Rightarrow q) \Rightarrow (p \Rightarrow r)$	Complete

Premise	Negation Introduction	Implication Introduction
Assumption	Negation Elimination	Implication Elimination
Reiteration	And Introduction	Biconditional Introduction
Delete	And Elimination	Biconditional Elimination
Or Introduction		
Or Elimination		

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