

Introduction to Logic

Problem 3.3 - Fitch System

Given $(p \Rightarrow q)$ and $(r \Rightarrow s)$, use the Fitch System to prove $(p \vee r \Rightarrow q \vee s)$.

Start from the given premises. 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.	$p \Rightarrow q$	Premise
2.	$r \Rightarrow s$	Premise
3.	$ p r$	Assumption
4.	$ p$	Assumption
5.	$ q$	Implication Elimination: 1, 4
6.	$ q s$	Or Introduction: 5
7.	$p \Rightarrow q s$	Implication Introduction: 6
8.	$ r$	Assumption
9.	s	Implication Elimination: 2, 8
10.	$ q s$	Or Introduction: 9
11.	$r \Rightarrow q s$	Implication Introduction: 10
12.	$ q s$	Or Elimination: 3, 7, 11
13.	$p r \Rightarrow q s$	Implication Introduction: 12
Goal	$p r \Rightarrow q s$	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

Reset

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