



Propositional Logic

Basic Rules Flash cards

Instructions for Using “Flashcards”

- o On one slide is the proper name of the rule as well as the shorthand used in proofs. On the next slide is an example of how the rule works and what it would look like as well as a notation on how many lines are needed to be cited in your justification in the proof.
- o Example
- o If you do a conjunction introduction for A and B. It would be a 2 line rule and your justification would read 2,3 &I.



Conjunction Introduction

&|

Two Line Rule

A

B

$\vdash A \ \& \ B$

Conjunction Elimination

&E

One Line Rule

A & B

⊢ A

OR

A & B

⊢ B



Disjunction Introduction

vi

One Line Rule

A

$\vdash A \vee$ (anything)

Disjunction Elimination

vE

Three Line Rule

$A \vee B$

$A \rightarrow C$

$B \rightarrow C$

$\vdash C$

Conditional Introduction



Multi-Line Rule

$$\begin{array}{l} | \quad A \quad \quad \quad H \\ | \quad \dots \\ | \quad \dots \\ | \quad B \\ \hline \vdash A \rightarrow B \end{array}$$

Conditional Elimination

→E

Two Line Rule

$A \rightarrow B$

A

$\vdash B$

Bi-conditional Introduction



Two Line Rule

$$A \rightarrow B$$

$$B \rightarrow A$$

$$\vdash A \leftrightarrow B$$

Bi-conditional Elimination

$\leftrightarrow E$

One Line Rule

$$A \leftrightarrow B$$

$$\vdash A \rightarrow B$$

OR

$$A \leftrightarrow B$$

$$\vdash B \rightarrow A$$

Negation Introduction

\sim |

Multi-Line Rule

	A	H
	
	...	
	B & ~B	
⊢	~A	

Negation Elimination

$\sim E$

One Line Rule

$\sim\sim A$

$\vdash A$