The Propositional Calculus (Summary)

Symbols

Atom particles:	**P Q R**	
Atom suffix:	**'**	(prime)
Prefix operation:	~	(not)
Infix operations:	**^ v** ⊃	(and, or, if-then/implies)
Infix op boundaries:	< >	(begin op, end op)
Fantasy boundaries:	**[ ]**	(push, pop)

Rules of Formation

RULE #0: All atoms are well-formed	atoms
RULE #1: If ***x*** is well-formed, then so is ***~x***	***~x***
RULE #2: If ***x*** and ***y*** are well-formed, then so is ***<x^y>***	***<x ^ y>***
RULE #3: If ***x*** and ***y*** are well-formed, then so is ***<xvy>***	***<x v y>***
RULE #4: If ***x*** and ***y*** are well-formed, then so is ***<x⊃y>***	***<x ⊃y>***

Axioms

None

Rules of Inference

Rule	Prior Theorem	Consequent Theorem
JOINING RULE	***x*** and ***y***	***<x ^ y>***
SEPARATION RULE	***<x ^ y>***	***x*** and ***y***
DETACHMENT RULE	***x*** and ***<x ⊃y>***	***y***
CONTRAPOSITIVE RULE	***<x ⊃y>***	***<~y ⊃~x>***
	<~y ⊃~x>	***<x ⊃y>***
DE MORGAN'S RULE	***<~x ^ ~y>***	***~<x v y>***
	~<x v y>	***<~x ^ ~y>***
SWITCHEROO RULE	***<x v y>***	***<~x ⊃y>***
	<~x ⊃y>	***<x v y>***
DOUBLE-TILDE RULE[a]	Any string with ~~	Same string with one less ~~
	Any string	Same string with one more ~~
FANTASY RULE	If ***y*** can be derived given ***x***	***<x ⊃y>***

[a] Valid only if resulting string is well-formed