

Logic Cheat Sheet by Snith via cheatography.com/185705/cs/38799/

Symbols	
٦	NOT
V	OR
٨	AND
\rightarrow	IMPLIES
\leftrightarrow	EQUAL

Truth table								
р	q	¬р	рvq	рΛq	$p \to q$	$p \leftrightarrow q$		
Т	Т	F	Т	Т	Т	Т		
Т	F	F	Т	F	F	F		
F	Т	Т	Т	F	Т	F		
F	F	Т	F	F	Т	Т		

Logical equivalences			
¬¬ р	=	р	
рΛ q	≡	qΛp	
pvq	≡	q v p	
p ∧ (q ∧ r)	≡	$(p \land q) \land r$	
p v (q v r)	≡	(p v q) v r	
рΛр	≡	р	
pvp	≡	р	
p ∧ (q ∨ r)	≡	$(p \land q) \lor (p \land r)$	
p ∨ (q ∧ r)	≡	$(p \lor q) \land (p \lor r)$	
¬ (p ∧ q)	≡	¬pv¬q	
¬ (p v q)	≡	¬р∧¬q	
$p \to q$	≡	¬p∨q	
$p \rightarrow q$	≡	¬ (p ∧ ¬ q)	
$p \leftrightarrow q$	≡	$(b \to d) \lor (d \to b)$	
$p \rightarrow q$	=	$\neg q \rightarrow \neg p$	

Tautology
always true
p ∧ (a tautology) ≡ p
p v (a tautology) is a tautology
¬ (a tautology) is a contradiction

Contradiction
always false
p \wedge (a contradiction) is a contradiction
p ∨ (a tautology) ≡ p
¬ (a contradiction) is a tautology

Quantifier		
\forall	for all	
3	for some	

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By Snith cheatography.com/snith/

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