

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				
¬¬ p	≡	р		
pΛq	=	qΛp		
p v q	≡	q v p		
p Λ (q Λ r)	≡	(p ∧ q) ∧ r		
p v (q v r)	≡	(p v q) v r		
р∧р	≡	р		
рур	≡	р		
p ∧ (q ∨ r)	≡	$(p \land q) \lor (p \land r)$		
p v (q ∧ r)	≡	$(p \lor q) \land (p \lor r)$		
¬ (p ∧ q)	≡	¬р∨¬q		
¬ (p ∨ q)	≡	¬р∧¬q		
$p \to q$	≡	¬pvq		
$p \to q$	≡	¬ (p ∧ ¬ q)		
$p \leftrightarrow q$	≡	$(b \to d) \lor (d \to b)$		
$p \rightarrow q$	=	$\neg q \rightarrow \neg p$		

Tautology
always true
$p \land (a tautology) \equiv p$
p v (a tautology) is a tautology
¬ (a tautology) is a contradiction

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

Quantifier		
\forall	for all	
3	for some	



By **Snith** cheatography.com/snith/

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