Table of Logical Equivalences

Equivalence Name

Identity Laws

p Λ T ⟺ p

p V F ⟺ p

Domination Laws

p V T ⟺ T

p V F ⟺ F

Idempotent Laws

p V p ⟺ p

p Λ p ⟺ p

Double Negation

¬(¬p) ⟺ p

Commutative Laws

p V q ⟺ q V p

p Λ q ⟺ q Λ p

Associative Laws

(p V q) V r ⟺ p V (q V r)

p Λ (q Λ r) ⟺ (p Λ q) Λ r

Distributive Laws

p V (q Λ r) ⟺ (p V q) Λ (p V r)

p Λ (q V r) ⟺ (p Λ q) V (p Λ r)

De Morgan’s Laws

¬(p Λ q)⟺¬p V ¬q

¬(p V q)⟺¬p Λ ¬q

Complement Laws

p V ¬p ⟺ T

p Λ ¬p ⟺ F

Material Implication (MI)

p → q⟺¬p V q