



Boolean Identities



Name	AND Form	OR Form
Identity	$1A = A$	$0 + A = A$
Null	$0A = 0$	$1 + A = 1$
Idempotent	$AA = A$	$A + A = A$
Inverse	$A\bar{A} = 0$	$A + \bar{A} = 1$
Commutative	$AB = BA$	$A + B = B + A$
Associative	$(AB)C = A(BC)$	$(A + B) + C = A + (B + C)$
Distributive	$(A + B)(A + C) = A + (BC)$	$AB + AC = A(B + C)$
Absorption	$A(A + B) = A$	$A + AB = A$
NAND/NOR	DeMorgan's $\bar{A} + \bar{B} = \overline{\bar{A}\bar{B}} = \overline{AB}$	$\bar{A}\bar{B} = \overline{\bar{\bar{A}} + \bar{\bar{B}}} = \overline{A + B}$

XOR $\bar{A}B + A\bar{B} = A \oplus B$

XNOR $\bar{A}\bar{B} + AB = \overline{A \oplus B}$

Double Negation $\bar{\bar{A}} = A$