

## Boolean Algebra Definitions, Theorems, and Postulates

Idempotent(+)	$a + a = a$
Idempotent( $\cdot$ )	$a \cdot a = a$
Commutative(+)	$a + b = b + a$
Commutative( $\cdot$ )	$a \cdot b = b \cdot a$
Associative(+)	$(a + b) + c = a + (b + c)$
Associative( $\cdot$ )	$(a \cdot b) \cdot c = a \cdot (b \cdot c)$
Absorptive(+)	$a + (a \cdot b) = a$
Absorptive( $\cdot$ )	$a \cdot (a + b) = a$
Distributive(+)	$a + (b \cdot c) = (a + b) \cdot (a + c)$
Distributive( $\cdot$ )	$a \cdot (b + c) = a \cdot b + a \cdot c$
Complement(+)	$a + a' = 1$
Complement( $\cdot$ )	$a \cdot a' = 0$
Identity(+)	$a + 0 = a$
Identity( $\cdot$ )	$a \cdot 1 = a$
Involution	$(a')' = a$
Consensus(+)	$a \cdot b + a' \cdot c + b \cdot c = a \cdot b + a' \cdot c$
Consensus( $\cdot$ )	$(a + b) \cdot (a' + c) \cdot (b + c) = (a + b) \cdot (a' + c)$
DeMorgans(+)	$(a + b)' = a' \cdot b'$
DeMorgans( $\cdot$ )	$(a \cdot b)' = a' + b'$