

Axioms

Closure

- $a + b$ is in B
- $a \bullet b$ is in B

Identity

- $a + 0 = a$
- $a \bullet 1 = a$

Commutativity

- $a + b = b + a$
- $a \bullet b = b \bullet a$

Distributivity

- $a + (b \bullet c) = (a + b) \bullet (a + c)$
- $a \bullet (b + c) = (a \bullet b) + (a \bullet c)$

Associativity

- $a + (b + c) = (a + b) + c$
- $a \bullet (b \bullet c) = (a \bullet b) \bullet c$

Complementarity

- $a + a' = 1$
- $a \bullet a' = 0$

Theorems

Null

- $X + 1 = 1$
- $X \bullet 0 = 0$

Idempotency

- $X + X = X$
- $X \bullet X = X$

Involution

- $(X')' = X$

Uniting

- $X \bullet Y + X \bullet Y' = X$
- $(X + Y) \bullet (X + Y') = X$

Absorbion

- $X + X \bullet Y = X$
- $(X + Y') \bullet Y = X \bullet Y$
- $X \bullet (X + Y) = X$
- $(X \bullet Y') + Y = X + Y$

Factoring

- $(X + Y) \bullet (X' + Z) = X \bullet Z + X' \bullet Y$
- $X \bullet Y + X' \bullet Z = (X + Z) \bullet (X' + Y)$

Consensus

- $(X \bullet Y) + (Y \bullet Z) + (X' \bullet Z) = X \bullet Y + X' \bullet Z$
- $(X + Y) \bullet (Y + Z) \bullet (X' + Z) = (X + Y) \bullet (X' + Z)$

DeMorgan

- $(X + Y + \dots)' = X' \bullet Y' \bullet \dots$
- $(X \bullet Y \bullet \dots)' = X' + Y' + \dots$