

# Laws

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11:34 AM

## LOGIC

$P \vee Q \equiv Q \vee P$  commutative law  
 $P \vee (Q \vee R) \equiv (P \vee Q) \vee R$  associative law  
 $P \vee (Q \wedge R) \equiv (P \vee Q) \wedge (P \vee R)$  distributive law  
 $P \wedge P \equiv P$   $P \vee P \equiv P$  idempotent law  
 $P \wedge T \equiv P$   $P \vee F \equiv P$  identity laws  
 $P \wedge \sim P \equiv F$   $P \vee \sim P \equiv T$  inverse laws identity  
 $P \wedge F \equiv F$   $P \vee T \equiv T$  domination laws  
 $P \vee (P \wedge Q) \equiv P$   $P \wedge (P \vee Q) \equiv P$  absorption laws  
 $P \rightarrow Q \equiv \sim P \vee Q$  implication  
 $\sim(P \rightarrow Q) \equiv P \wedge \sim Q$

## SETS

$A \cap B = A$ , so  $A \cap B \subseteq A$  and  $A \subseteq A \cap B$

$A - (B \cup C) = (A - B) \cap (A - C)$  difference law