The Laws of Logic

For any primitive statements p, q, r, any tautology T_0, and any contradiction F_0,

1) $\neg\neg p \Longleftrightarrow p$ Law of *Double Negation*

2) $\neg(p \vee q) \Longleftrightarrow \neg p \wedge \neg q$ *DeMorgan's* Laws
   $\neg(p \wedge q) \Longleftrightarrow \neg p \vee \neg q$

3) $p \vee q \Longleftrightarrow q \vee p$ *Commutative* Laws
   $p \wedge q \Longleftrightarrow q \wedge p$

4) $p \vee (q \vee r) \Longleftrightarrow (p \vee q) \vee r^{\dagger}$ *Associative* Laws
   $p \wedge (q \wedge r) \Longleftrightarrow (p \wedge q) \wedge r$

5) $p \vee (q \wedge r) \Longleftrightarrow (p \vee q) \wedge (p \vee r)$ *Distributive* Laws
   $p \wedge (q \vee r) \Longleftrightarrow (p \wedge q) \vee (p \wedge r)$

6) $p \vee p \Longleftrightarrow p$ *Idempotent* Laws
   $p \wedge p \Longleftrightarrow p$

7) $p \vee F_0 \Longleftrightarrow p$ *Identity* Laws
   $p \wedge T_0 \Longleftrightarrow p$

8) $p \vee \neg p \Longleftrightarrow T_0$ *Inverse* Laws
   $p \wedge \neg p \Longleftrightarrow F_0$

9) $p \vee T_0 \Longleftrightarrow T_0$ *Domination* Laws
   $p \wedge F_0 \Longleftrightarrow F_0$

10) $p \vee (p \wedge q) \Longleftrightarrow p$ *Absorption* Laws
    $p \wedge (p \vee q) \Longleftrightarrow p$

[†] We note that because of the Associative Laws, there is no ambiguity in statements of the form $p \vee q \vee r$ or $p \wedge q \wedge r$.