Propositional Laws

Name of Law	Equation of law
De Morgan's Laws	$\neg(p \wedge q) \equiv \neg p \vee \neg q$ $\neg(p \vee q) \equiv \neg p \wedge \neg q$
Identity laws	$p \wedge T \equiv p$ $p \vee F \equiv p$
Domination laws	$p \vee T \equiv T$ $p \wedge F \equiv F$
Idempotent laws	$p \vee p \equiv p$ $p \wedge p \equiv p$
Double negation law	$\neg(\neg p) \equiv p$
Commutative laws	$p \vee q \equiv q \vee p$ $p \wedge q \equiv q \wedge p$
Associative laws	$p \vee (q \vee r) \equiv (p \vee q) \vee r$ $p \wedge (q \wedge r) \equiv (p \wedge q) \wedge r$
Distributive law of conjunction over disjunction	$\mathbf{p \wedge (q \vee r) \equiv (p \wedge q) \vee (p \wedge r)}$
Equivalences involving conditional statements and bi-conditionals	$p \rightarrow q \equiv \neg p \vee q$ $p \rightarrow q \equiv \neg q \rightarrow \neg p$ $\mathbf{p \leftrightarrow q \equiv (p \rightarrow q) \wedge (p \rightarrow q)}$ $\mathbf{p \leftrightarrow q \equiv (p \wedge q) \vee (\neg p \wedge \neg q)}$