Summary

Commutativity: $p \lor q \Leftrightarrow q \lor p$ $\qquad$ $p \land q \Leftrightarrow q \land p$

Associativity: $p \lor (q \lor r) \Leftrightarrow (p \lor q) \lor r$
$p \land (q \land r) \Leftrightarrow (p \land q) \land r$

Idempotence: $p \lor p \Leftrightarrow p$ and $p \land p \Leftrightarrow p$

Distributivity: $p \lor (q \land r) \Leftrightarrow (p \lor q) \land (p \lor r)$
$p \land (q \lor r) \Leftrightarrow (p \land q) \lor (p \land r)$

De Morgan's Laws: $\neg(p \lor q) \Leftrightarrow \neg p \land \neg q$
$\neg(p \land q) \Leftrightarrow \neg p \lor \neg q$

Double Negation Law: $\neg(\neg p) \Leftrightarrow p$;

Tautology Laws: $p \lor \text{true} \Leftrightarrow \text{true}$
$p \land \text{true} \Leftrightarrow p$

Contradiction Laws: $p \lor \text{false} \Leftrightarrow p$ $\qquad$ $p \land \text{false} \Leftrightarrow \text{false}$

Excluded Middle Laws: $p \lor \neg p \Leftrightarrow \text{true}$
$p \land \neg p \Leftrightarrow \text{false}$

Absorption Laws: $p \lor (p \land q) \Leftrightarrow p$ $\qquad$ $p \land (p \lor q) \Leftrightarrow p$

Implication Law: $p \Rightarrow q \Leftrightarrow \neg p \lor q$

Contrapositive Law: $p \Rightarrow q \Leftrightarrow \neg q \Rightarrow \neg p$

Equivalence Law: $(p \Leftrightarrow q) \Leftrightarrow (p \Rightarrow q) \land (q \Rightarrow p)$