Tautologies

A *tautology* is a formula that is true regardless of what we substitute for its identifiers (as long as the substitution is syntactically correct). The formula

$$\neg(F \wedge G) \equiv (\neg F \vee \neg G)$$

is a tautology because it is true if any formulas are substituted for F and G. The formula

$$\neg(\forall\, x \in S \,:\, P(x)) \;\equiv\; (\exists\, x \in S \,:\, \neg P(x))$$

is a tautology because it is true when any expression is substituted for S and any formula (that may depend on x) is substituted for $P(x)$.

CLOSE