

M260 1.1

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## Logical Equivalence Quiz

For statement variables  $p$ ,  $q$ ,  $r$ , tautology  $t$ , and contradiction  $c$ , find logical equivalents of the following:

$$p \wedge q \equiv \underline{\hspace{2cm}}$$

$$p \vee q \equiv \underline{\hspace{2cm}}$$

$$(p \wedge q) \wedge r \equiv \underline{\hspace{2cm}}$$

$$(p \vee q) \vee r \equiv \underline{\hspace{2cm}}$$

$$p \wedge (q \vee r) \equiv \underline{\hspace{2cm}}$$

$$p \vee (q \wedge r) \equiv \underline{\hspace{2cm}}$$

$$p \wedge t \equiv \underline{\hspace{2cm}}$$

$$p \vee c \equiv \underline{\hspace{2cm}}$$

$$p \vee \sim p \equiv \underline{\hspace{2cm}}$$

$$p \wedge \sim p \equiv \underline{\hspace{2cm}}$$

$$\sim(\sim p) \equiv \underline{\hspace{2cm}}$$

$$p \wedge p \equiv \underline{\hspace{2cm}}$$

$$p \vee p \equiv \underline{\hspace{2cm}}$$

$$\sim(p \wedge q) \equiv \underline{\hspace{2cm}}$$

$$\sim(p \vee q) \equiv \underline{\hspace{2cm}}$$

$$p \vee t \equiv \underline{\hspace{2cm}}$$

$$p \wedge c \equiv \underline{\hspace{2cm}}$$

$$p \vee (p \wedge q) \equiv \underline{\hspace{2cm}}$$

$$p \wedge (p \vee q) \equiv \underline{\hspace{2cm}}$$

$$\sim t \equiv \underline{\hspace{2cm}}$$

$$\sim c \equiv \underline{\hspace{2cm}}$$