

Name: _____

QUIZ 5 

MATH 300
September 5, 2024


1. Without changing its meaning, write the following sentence in the form of “*If P , then Q .*”

The quadratic equation has no real solutions provided that the discriminant is negative.

2. Use a truth table to decide if $\sim P \wedge (P \Rightarrow Q)$ and $\sim (Q \Rightarrow P)$ are logically equivalent.

3. Suppose that $((P \wedge Q) \vee R) \Rightarrow (R \vee S)$ is false. Find the T/F values for P , Q , R and S .
(This can be done without writing a truth table.)

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1. Without changing its meaning, write the following sentence in the form of “*If P , then Q .*”

A geometric series with ratio r converges whenever $|r| < 1$.

2. Use a truth table to decide if $P \Rightarrow \sim Q$ and $\sim P \vee \sim Q$ are logically equivalent.

3. Suppose that $((\sim R \vee P) \Leftrightarrow Q) \wedge (\sim Q)$ is true. Find the T/F values for P , Q and R .
(This can be done without writing a truth table.)