Math 112 - Quiz 6

Name _____

October 4, 2017

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Correct the truth table shown below.

p	q	$\sim q$	$(\sim q \vee p)$	$(\sim q \vee p) \rightarrow q$
T	T	F	F	T
T	F	T	T	F
F	T	T	F	T
F	F	T	T	T

2. (2 points) In class, we showed that $\sim(p \rightarrow q)$ is logically equivalent to $\sim q \wedge p$. Use this to negate the statement, "If it is Friday, then I will not eat pizza."

3. (3 points) Use a truth table to determine whether $(p \rightarrow q) \wedge (\sim p \vee q)$ is a tautology, a self-contradiction, or neither.

4. (1 point) How do we show that two compound statements are logically equivalent?

5. (1 point) What does it mean for a compound statement to be a tautology?