

Math 112 - Quiz 4

September 22, 2016

Name key

Score _____

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

1. (1 point) Give an example of a sentence that is not a statement.

ALL FLOWERS ARE PRETTY.

2. (2 points) Write the negation of the statement "All dogs bite."

SOME DOGS DO NOT BITE.

3. (3 points) Construct the truth table for $\sim p \vee q$.

| p | q | $\sim p$ | $\sim p \vee q$ |
|-----|-----|----------|-----------------|
| T | T | F | T |
| T | F | F | F |
| F | T | T | T |
| F | F | T | T |

4. (2 points) Here are the statements p and q :

p : My car is broken down.

q : My car is in the shop.

What statement, in a grammatically correct sentence, is $p \wedge \sim q$?

My car is broken down, AND IT IS NOT IN THE SHOP.

5. (2 points) Referring to the problem above, write the statement "If my car is in the shop, then my car is broken down" in symbolic form.

$q \rightarrow p$