

# Math 112 - Quiz 3

February 27, 2019

Name key

Score \_\_\_\_\_

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

1. (2 points) Determine whether each sentence is a statement.

(a) Please do not use your cell phone in class. **NOT A STATEMENT.**

(b)  $10 - 3 = 5$  **STATEMENT (F)**

(c) Steve Jobs is the founder of Microsoft. **STATEMENT (F)**

(d) Just do it! **NOT A STATEMENT.**

2. (1 point) Write the negation of the statement "He is an English major."

**HE IS NOT AN ENGLISH MAJOR.**

3. (2 points) Identify each statement as a conjunction, disjunction, conditional, or biconditional.

(a) She will get very sick if the bee stings her.

**CONDITIONAL**

(b) Sara and Brian went hiking in the mountains.

**CONJUNCTION**

(c) I'm going to pass my math class if and only if I do my homework.

**BICONDITIONAL**

(d) When your battery dies, you should charge your phone.

**CONDITIONAL**

TAKE-HOME PORTION OF QUIZ 3. DUE MONDAY.

4. (2 points) Write the negation of each statement.

(a) Nobody ever survived a fall from Mount Catherine.

SOMEBODY SURVIVED A FALL FROM MT. CATHERINE.

(b) Some people watch *Game of Thrones*.

NO BODY WATCHES GAME OF THRONES.

5. (2 points) Let  $p$  = "The dog is a poodle" and let  $q$  = "The dog bites." Write each statement in words.

(a)  $q \rightarrow \sim p$

IF THE DOG BITES, THEN IT IS NOT A POODLE.

(b)  $\sim p \wedge p$

THE DOG IS NOT A POODLE AND IT IS A POODLE.

6. (1 point) Refer to the statements  $p$  and  $q$  from the problem directly above. Write the statement in symbolic form: "The dog bites if it is a poodle."

$q$  IF  $p$

$p \rightarrow q$