

Math 099 - Assignment 5

March 5, 2019

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary. This assignment is worth 5 points.

1. Suppose p is the statement " $x = -5$ " and q is the statement " $x^2 = 25$." Write each statement in words.

(a) $\sim p \wedge q$ $x \neq -5$ AND $x^2 = 25$.

(b) $\sim p \vee \sim q$ $x \neq -5$ OR $x^2 \neq 25$.

(c) $\sim p \rightarrow \sim q$ IF $x \neq -5$, THEN $x^2 \neq 25$.

2. Referring to the statements p and q from above, suppose p is false and q is true. Determine the truth value of each compound statement. Explain or show work.

(a) $p \wedge q$ $F \wedge T$ IS F

(b) $p \rightarrow q$ $F \rightarrow T$ IS T

(c) $\sim q \wedge \sim p$ $\sim T \wedge \sim F = F \wedge T$ IS F

(d) $p \vee \sim p$ $F \vee \sim F = F \vee T$ IS T

3. Construct the truth table for $\sim q \rightarrow \sim p$.

p	q	$\sim q$	$\sim p$	$\sim q \rightarrow \sim p$
T	T	F	F	T
T	F	T	F	F
F	T	F	T	T
F	F	T	T	T