Math 099 - Quiz 5

March 19, 2019

Name key

Score _____

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

p is T
q is F

1. (5 points) Suppose p is true statement and q is a false statement. Determine the truth value of each compound statement. Explain or show work.

   (a) $\sim(p \vee q)$

   not (T or F) = not T = F

   (b) $p \to q$

   T implies F = F

   (c) $\sim q \vee \sim p$

   not F or not T = T or F = T

   (d) $q \to (\sim q)$

   F implies (not F) = F implies T = T

   (e) $\sim(\sim(\sim p))$

   not (not (not T)) = not (not F) = not T = F

2. (5 points) Suppose p is the statement "Today is Monday" and q is the statement "I get paid today."

   (a) Write the statement in words: $\sim p \to (\sim q)$

   IF TODAY IS NOT MONDAY, THEN I DO NOT GET PAID TODAY.

   (b) Write the statement in words: $\sim p \wedge q$

   TODAY IS NOT MONDAY AND I GET PAID TODAY.

   (c) Write the statement in symbolic form: "If Today is Monday, then I get paid today."

   $p \to q$