

Quiz 1

D Term, 2013

Show all work needed to reach your answers.

1. (5 points) Which of the following is a statement (S), which is a predicate (P), and which is neither (N) (because it is ambiguous).

1pt
each(a) S The 10^{47} th digit of π is 3.(b) S $x = x$ (True $\forall x$)(c) P $y = x$ (d) S All functions are continuous.(e) N All functions are ugly when written in MS Word. (Matter of opinion)

High: 20
Median: 17
Low: 14

1pt
each

2. (10 points) Please complete the following truth table.

A	B	C	$A \wedge B$	$\sim C$	$\sim (A \Rightarrow B)$	$(C \vee (\sim A)) \wedge B$	$(A \Rightarrow (B \wedge C)) \Leftrightarrow ((A \vee (\sim B)) \Rightarrow C)$
T	T	F	T	T	F	F	T
F	T	T	F	F	F	T	T

3. (5 points) Please negate the following statements:

(a) "Some functions are discontinuous."

2 All functions are continuous.(b) "If a positive integer n is even, then n is also divisible by 3."3 $\exists n \in \mathbb{Z}^+$ such that n is even,
but n is not divisible by 3.