Quiz #2

Monday, September 25 2017

Duration: 20 min

NAME: _____

Please write clearly and properly.

Problem	Grade
1	
2	
Total	

Problem 1 (~ 6 points.)**.** Consider the following argument:

> If Socrates is a cat, then he is mortal. Socrates is a man or he is immortal.
> Therefore: if Socrates is a cat, then he is a man.

Is this argument valid or not? *Justify your answer appropriately: the correct answer alone is worth no points.*

Problem 2 (~ 4 points.). Are the following propositions true or false? *No explanations required.*

(1) $\forall n \in \mathbb{N} \quad n + 1 > n$

(2) $\exists t \in \mathbb{R} \quad t < -t$

(3) $\forall x \in \mathbb{R} \quad (x^2 > 0 \rightarrow x > 0)$

(4) $\exists \alpha \in \mathbb{R} \quad (\alpha^2 > 0 \rightarrow \alpha > 0)$

(5) $\exists w \in \mathbb{Z} \quad ((w \geqslant 0) \wedge (w \leqslant 0))$

(6) $\forall x \in \mathbb{R} \quad x^2 - 3x + 2 = 0$

(7) $\forall y \in \mathbb{R} \quad ((y^2 - y = 0) \leftrightarrow ((y = 0) \vee (y = 1)))$

(8) $\exists \theta \in \mathbb{R} \quad ((\theta^2 = 1) \leftrightarrow (\theta = 1))$