Discrete Math
Quiz 7

Name:_____

You have 10 minutes to complete this quiz. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. Write $((\neg((\forall x)(x = 0))) \wedge (\neg((\forall x)(x \neq 0))))$ in prenex form.

$(\exists x)(\exists y)((x \neq 0) \wedge (y = 0))$

2. Write down a winning strategy for the appropriate quantifer to establish the truth or falsity in the real numbers of the sentence in Problem 1.

(a) The appropriate quantifier is: $\exists$.

(b) The strategy is:

- $\exists$ chooses $x = 1$
- $\exists$ chooses $y = 0$

(c) This is a winning strategy, since it is possible for $\exists$ to make the choices $x = 1$ and $y = 0$, and these choices satisfy the body of the formula. .