DISCRETE MATH
QUIZ 3

Name:_____

You have 10 minutes for this exam. 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**.

1. Write a formal statement about the real numbers that expresses "Every positive number is the square of some positive number."

$$\forall x \left((0 < x) \to \exists y((0 < y) \wedge (y^2 = x))\right)$$

2. What is being expressed by the following sentences about sets?

(a) $\forall x \exists y \, (x \in y)$

Every set is an element of some set.

(b) $\exists x \, (\exists y \exists z((y \in x) \wedge (z \in x) \wedge (\neg(y = z))))$

There is a set with at least two distinct elements.