

**DISCRETE MATH**  
**QUIZ 3**

**Name:** \_\_\_\_\_

1. Expand the abbreviation “ $\lim_{x \rightarrow a} f(x) = f(a)$ ” into a formal sentence in prenex form. (You may use the restricted quantifiers  $\forall \epsilon > 0$  and  $\exists \delta > 0$ .)

2. Write the negation of the formal sentence from Problem 1 in prenex form. (A restricted quantifier, like  $\forall \epsilon > 0$ , behaves like the related unrestricted quantifier,  $\forall \epsilon$ .)