Math 1A 108 DIS Quiz 3

Name: _____   Score: _____

1. Compute the following limits, no explanations or proofs are necessary. (Hint: some of the limits may not exist) (1 point each)

    (a) $\lim_{x \to -1} 3x - 1$

    (b) $\lim_{x \to 1} x^2$

    (c) $\lim_{x \to \frac{\pi}{2}} \tan x$

    (d) $\lim_{x \to 3} \frac{x^2 - 5x + 6}{x - 3}$

    (e) $\lim_{x \to 3^-} \frac{x - 3}{x^2 - 6x + 9}$

    (f) $\lim_{x \to 1} \frac{\frac{1}{x} - 1}{x - 1}$

    (g) $\lim_{x \to 0} x \cos(\frac{1}{x^2})$

2. (a) State the $\epsilon - \delta$ definition of $\lim_{x \to c} f(x) = L$. (1 point)

   (b) Pick one of the limits you computed in question 1 and prove that your answer was correct using the $\epsilon - \delta$ definition. (2 points)