Name: 1/20/06

Math 251 Quiz 2

1. Give the precise ε, δ definition of a limit.

2. Prove $\lim_{x \to 3} (2x - 4) = 2$ using the ε, δ definition of a limit.

3. Evaluate the limit, if it exists.

$$\lim_{x \to 3} \frac{x^2 - 9}{x^2 - 2x - 3}$$

4. Use the squeeze theorem to prove

$$\lim_{x \to 0} x^6 \sin\left(\frac{3x + |x|}{x^2}\right) = 0.$$