

Math 126: Calculus II
Quiz 3 *September 12, 2000*

Name: _____
Section: _____

1. The song “Who Let the Dogs Out?” is very popular on campus right now. Assume the number of people who have heard the song is growing exponentially with respect to time. Initially, only 2 people had heard the song. After 21 days, 50 people had heard the song. How many days until the entire student body of 10,000 people have heard the song?

2. Calculate the following, carefully **showing your work** and **all** important steps.

$$\lim_{x \rightarrow 0} \frac{x^2}{\ln(\sec(x))}.$$

3. Consider the functions $f(x) = \ln(2x)$ and $g(x) = \log_5(x)$. As $x \rightarrow \infty$, does f grow faster than g , grow at the same rate as g , or grow slower than g ? Carefully **show your work** and **all** important steps.