QUIZ 7 - MATH 111 Friday, April 7

YOUR NAME:_____ George Voutsadakis

Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [5 points] During a rat infestation at a construction site, the initial population of rats was estimated to be 5 rats, but, by the end of the third month, it had exploded to 1080 rats. Find an exponential model for the population $P(t)$ of rats, where t is the number of months after the infestation was noticed.

2. [5 points] Suppose a graph of an exponential function passes through the points $(3, 1029)$ and $(-1, \frac{3}{7})$. Find a formula for $y = f(x)$ by hand (that is, do not use decimals).

   What is the constant percentage by which y changes at each x-step?