City Semester Name:_____

Quiz

Show all work for full credit.

1. Let $f(x) = 10(2)^x$

   (a) Give the domain and range of f.

   (b) Give a rough sketch of f, labeling salient features.

2. Assuming $g(x)$ is an exponential of the form $y = ab^x$ that passes through the points $(2, 50)$ and $(4, 12.5)$, find the equation of $g(x)$.

3. If you deposit 100 dollars at a bank, how much money will you have at the end of the following situations:

   (a) Your money is compounded annually at 5% for 5 years.

(b) Your money is compounded monthly at 5% for 5 years.

(c) Your money is compounded continuously at 5% for 5 years.

4. If over 10 years your money has doubled, what is your effective annual growth rate for each of those years?

5. What is the effective annual decay rate of the function $f(t) = 100e^{-0.25t}$?

6. Give a sketch of the following two functions on the same set of axes. $f(x) = 10(1.05)^x$ and $g(x) = 1.5(f(-x)) - 4$.