

NAME:

Math 103: College Algebra and Trigonometry
Quiz 3, 10 October 2008

The following three questions are worth a total of 10 points. The majority of the credit you receive will be based on the completeness and the clarity of your responses. Show your work, and avoid saying things that are untrue, ambiguous, or nonsensical.

1. What kind of a function is $f(x) = \left(\frac{1}{2}\right)^x$? Describe at least four important properties of the graph of $y = f(x)$.

2. Simplify $\log_3(81x^2)$. Give a decimal approximation of the value of this logarithm if $x = 7$.

3. Does the following function g have an inverse function g^{-1} ? If it does, find the inverse function and prove that it is indeed the inverse function of g . If it does not, explain why not.

$$g(x) = x^2 - 4x$$