QUIZ 8 - MATH 111 Friday, April 12

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. [4 points] Convert from exponentials to logarithms or vice-versa as appropriate.

$$y = \log_7(10) \longrightarrow$$

$$x = e^{23} \longrightarrow$$

$$7 = \log a \longrightarrow$$

$$5^y = 29 \longrightarrow$$

2. [2 points] Use a small table of values to sketch the graph of $y = \log_{\frac{1}{3}} x$.

3. [4 points] Detect the transformations needed to get from $f(x) = \log_3 x$ to

$$g(x) = \log_3 (5 - x) + 7.$$

$y = \log_3 x \quad \longrightarrow \qquad\qquad (\qquad\qquad)$

$\longrightarrow \qquad\qquad (\qquad\qquad)$

$\longrightarrow \quad y = \log_3 (5 - x) + 7 \qquad (\qquad\qquad)$

4. [4 points] The following shows the graph of a transform $y = f(x)$ of the logarithm to base 5. Find a possible formula for $y = f(x)$ showing (and explaining) all your steps.