Quiz 4

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.
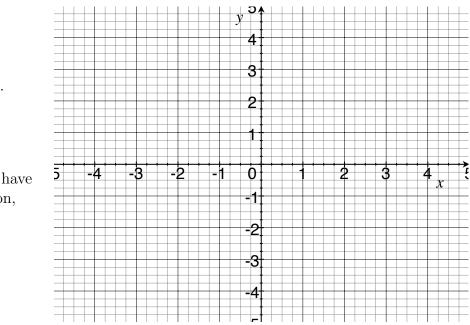
1. Solve for x in the following equations:

   (a) [2] (WebHW10 #12)
   $$4(1 + 10^{4x}) = 6$$

   (b) [2] (§4.4 #43)
   $$\log_2(3) + \log_2(x) = \log_2(5) + \log_2(x - 2)$$

2. Let $f(x) = \log_3(x)$

   (a) [1] Graph f on the axis provided.

   (b) [1] (§4.2) Does f have an inverse function, why or why not?

   (c) [2] (§4.2 #54) Describe the graph transformations needed to transform the graph of f into the function $y = \log_3(x - 1) - 2$.

3. [2] (WebHW9 #18) How long will it take for an investment of $1000 to double in value if the interest rate is 8.5% per year, compounded continuously?

   Note: guess and check is *not* the way to get credit for this problem. However, approximations using some algebraic technique will.

2