Quiz 5
Math 111

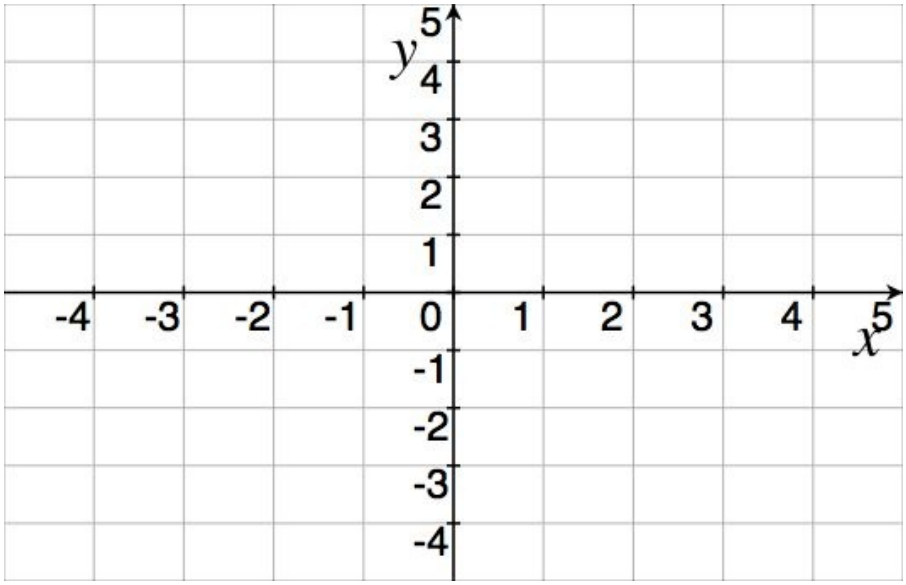
Name:

Show *all* your work algebraically for each and simplify. No credit is given without supporting work.

1. [4] Use algebra to find the inverse of the given one-to-one function.

$$f(x) = \frac{1}{2x+1}$$

2. [6] List the transformations needed to transfrm the graph of $h(x) = \ln x$ into the graph of $f(x) = \ln(x+3) - 4$. Graph both h and f. Be sure to identify which one is which. Recall that e is approximately 2.718.



3. Define $f(x) = 1/x$ and $g(x) = x^2 + 2x - 5$.

   (a) [2] Find the rule of the function $f - g$.

   (b) [2] Find the domain of the function $f - g$.

4. Define $f(x) = \frac{1}{2x+1}$ and $g(x) = x^2 - 1$

   (a) [2] Find the rule of the function $f \circ g$.

   (b) [2] Find the domain of the function $f \circ g$.

5. [2] Compute the following:

   (a) $\log_2 16$

   (b) $\log 10,000$