

Math 133

Quiz 2 Sample
September 16, 2008

You may use your calculator. Indicate any plots you generate with your calculator. Show your algebra whenever calculations are done by hand.

1. The graphs of the functions $y = f(x)$ and $y = g(x)$ are shown in Figure 1. Write $g(x)$ in terms of $f(x)$ by transforming the dependent and/or independent variable of $f(x)$ as necessary. Explain your answer.

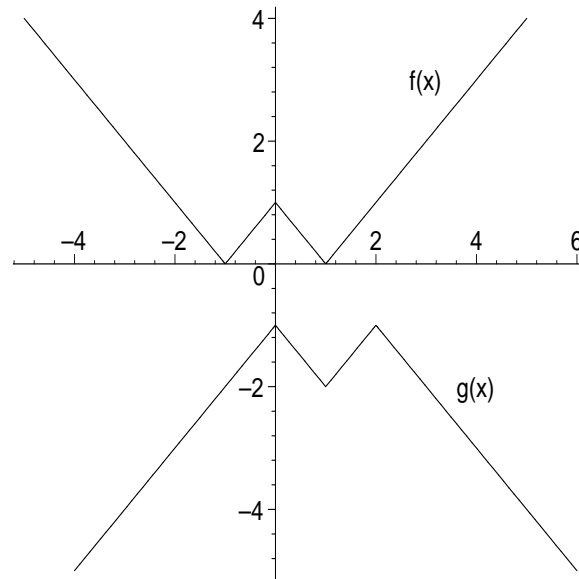


Figure 1:

2. Let $f(x) = x^2 + 1$ and $g(x) = \cos(x)$. What are the domains and ranges of the functions $f(x)$, $g(x)$, and $h(x) = f(g(x))$?

3. Let $f(x) = x^2$ and let $k(x) = \frac{1}{2}f(3x + 2) + 4$. Explain how to obtain the graph of $k(x)$ from the graph of $f(x)$, then graph $k(x)$ on the accompanying graph paper. You may find it helpful to construct the graph of $k(x)$ in several steps.