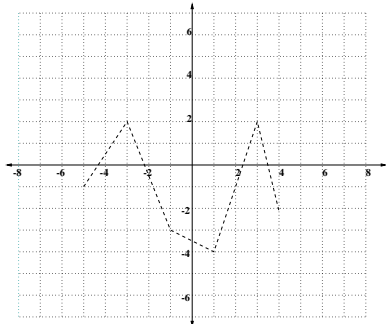


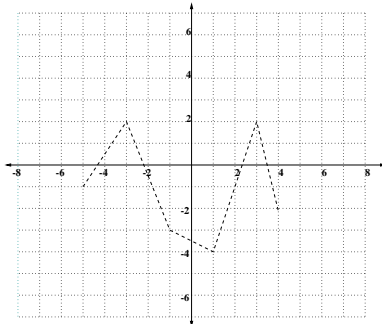
MTH 30, Sec. 2996S. QUIZ 2. NAME: _____

- [5] **1.** Given the graph of the function f below, sketch the graphs of the equations below in the axis provided. (Note that the original graph of f is given, in grey, as a reference.)

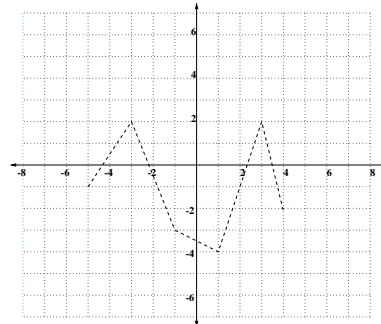
$y = f(x)$



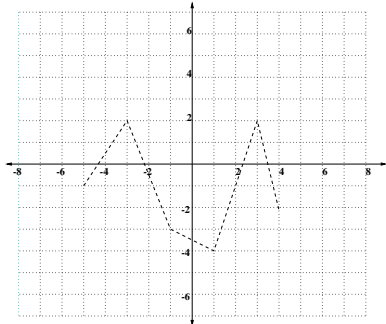
a) $y = 2 + f(x - 3)$



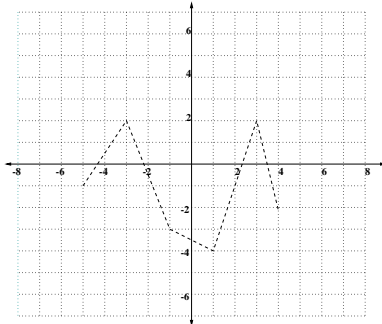
b) $y = 2f(-x)$



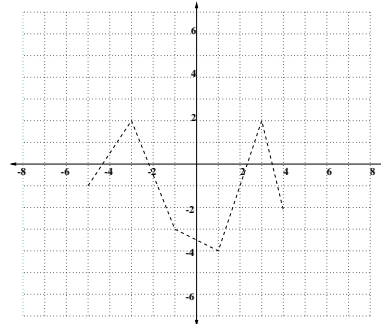
c) $y = f(2x) - 1$



d) $y = |f(x)|$



e) $y = f(|x|)$



- [5] **2.** If $f(x) = x^2 - 1$ and $g(x) = \sqrt{x + 1}$, find (and express using interval notation)

a) The domains of f and g .

b) The domain of $f + g$.

c) The domain of $\frac{f}{g}$.

d) The domain of $g \circ f$.

[5] **3.** Given $f(x) = 2x - 1$ and $g(x) = x^2 + 3$ find

a) $(f + g)(2) =$

$(f + g)(x) =$

b) $(f \cdot g)(1) =$

$(f \cdot g)(x) =$

c) $\left(\frac{f}{g}\right)(0) =$

$\left(\frac{f}{g}\right)(x) =$

d) $(f \circ g)(2) =$

$(f \circ g)(x) =$

e) $(f \circ g \circ g)(2) =$

$(f \circ g \circ g)(x) =$

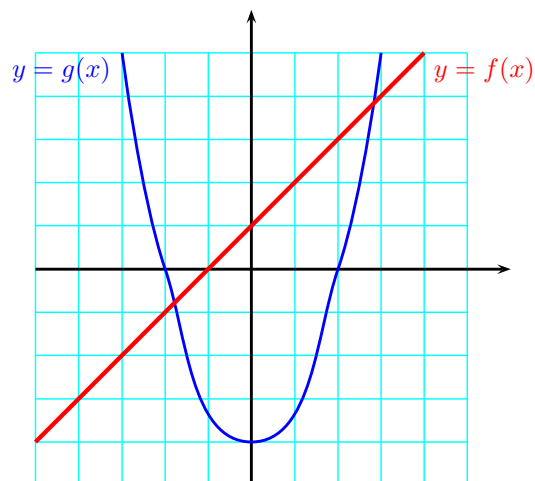
[5] **4.** Given the graph of the functions f and g below, find

a) $(f \circ g)(0)$

b) $(f \circ g)(-2)$

c) $(g \circ f)(1)$

d) $(g \circ f)(-1)$



[5] **5.** CHALLENGE! Find a function f that satisfies: $f \circ f = f \cdot f$.