Name:_____**AK**_____   Period:_____ Date:_____

2.4 Shifting, Reflecting and Stretching Graphs

1. Let f(x) be an even function. Which of the following transformations would result in g(x) still being an even function? Select all that apply.
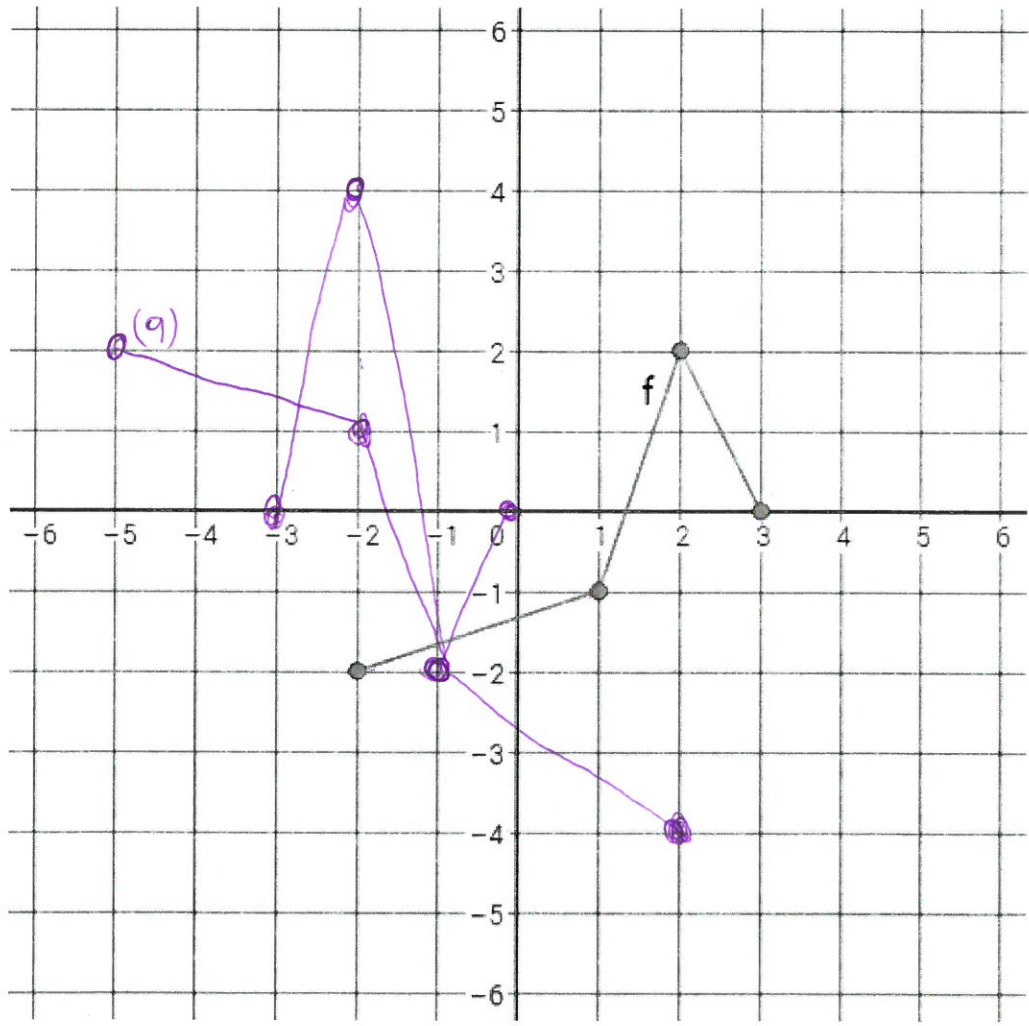
a) $g(x) = f(x - a)$ b) $g(x) = f(x) + a$ c) $g(x) = -f(x)$ d) $g(x) = f(-x)$ e) $g(x) = f(x + a)$

2. Let h(x) be an odd function. Which of the following transformations would result in g(x) still being an odd function? Select all that apply.
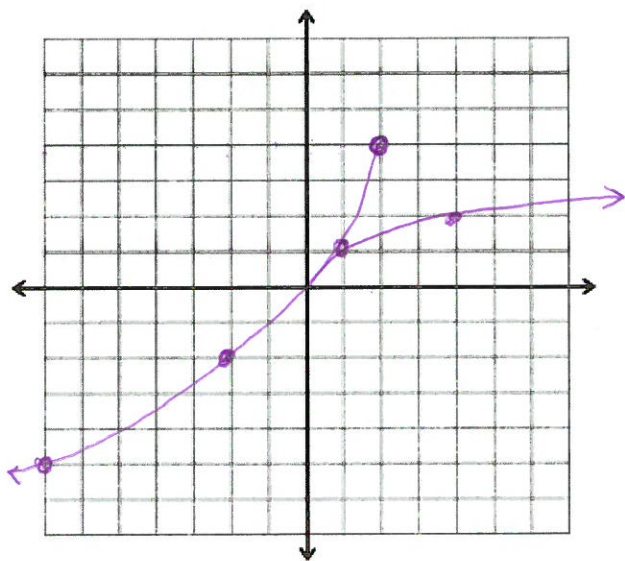
a) $g(x) = -2h(x)$ b) $g(x) = h(x + 3)$ c) $g(x) = h(-x)$ d) $g(x) = 4h(x)$ e) $g(x) = h(x) - 3$

3. Sketch a graph on each of the following functions given function f below.
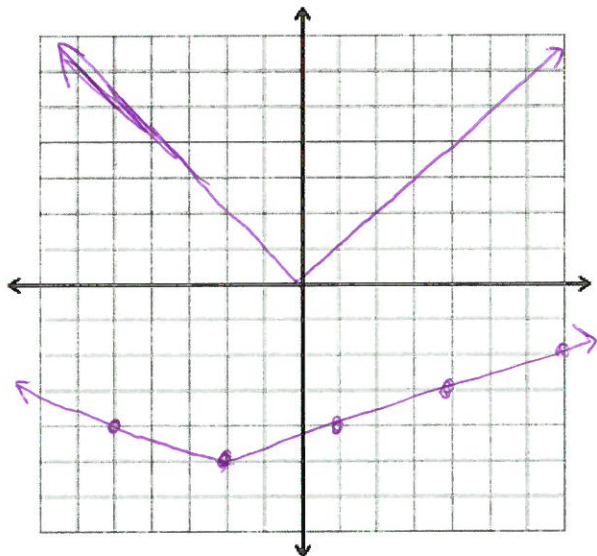   a) $y = -f(x + 3)$
   b) $y = 2f(-x)$

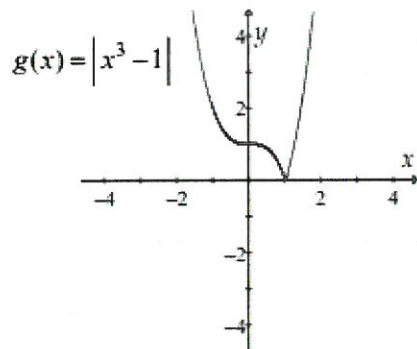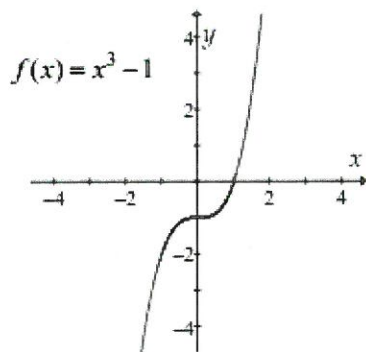4. Sketch a graph of $g(x) = 4 - \sqrt[3]{2-x}$ and the parent graph of g(x).

$$g(x) = -3\sqrt[3]{-(x-2)} + 4$$
$$x \leq 2$$

5. Sketch a graph of $f(x) = \frac{1}{3}|x+2| - 5$ and the parent graph of f(x).

6. The graphs of f(x) and g(x) are shown below. Describe how the graph of g was obtained from the graph of f.

$f(x) = x^3 - 1$

$g(x) = |x^3 - 1|$

All of the points below X in f(x) were reflected over the X-axis.

$$(x, y) \rightarrow (x, |y|)$$
Rule