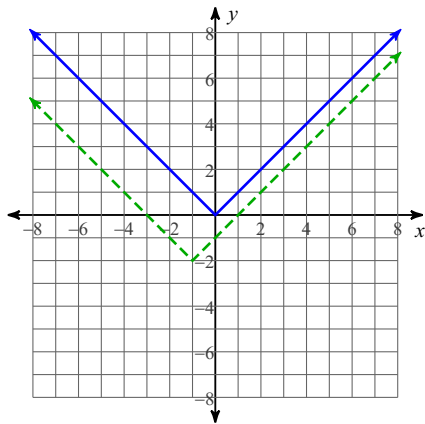


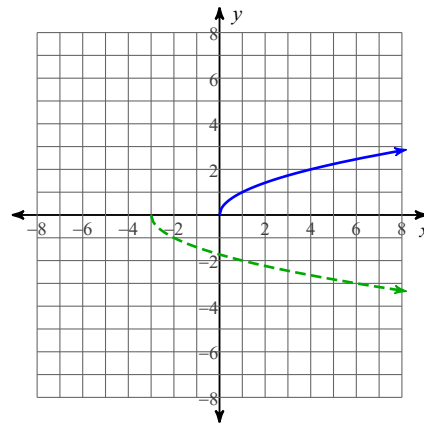
REDEMPTION - Writing Transformations

Write $g(x)$ (dashed line) in terms of $f(x)$ (solid line).

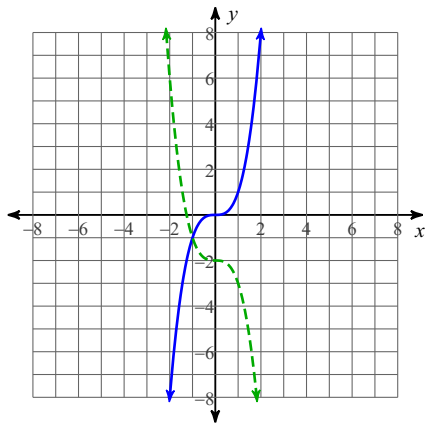
1)



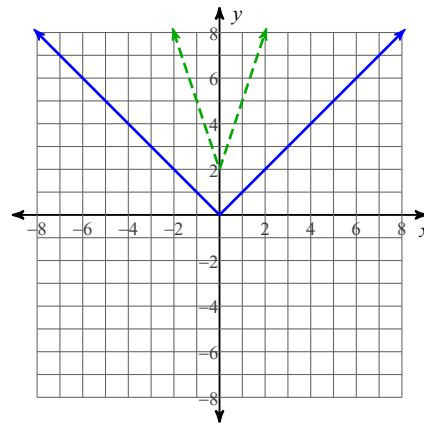
2)



3)



4)



Transform the given function $f(x)$ as described and write the resulting function as an equation.

- 5) $f(x) = |x|$
 expand vertically by a factor of 3
 translate left 3 units

- 6) $f(x) = x^3$
 expand vertically by a factor of 3
 reflect across the x-axis
 shift up 5 units

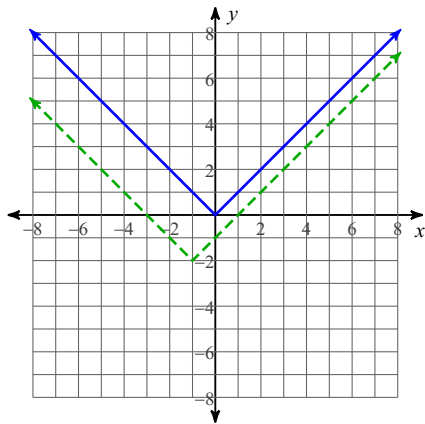
- 7) $f(x) = x^2$
 reflect across the x-axis
 translate left 2 units

- 8) $f(x) = \sqrt{x}$
 expand vertically by a factor of 3
 reflect across the x-axis
 translate left 3 units

REDEMPTION - Writing Transformations

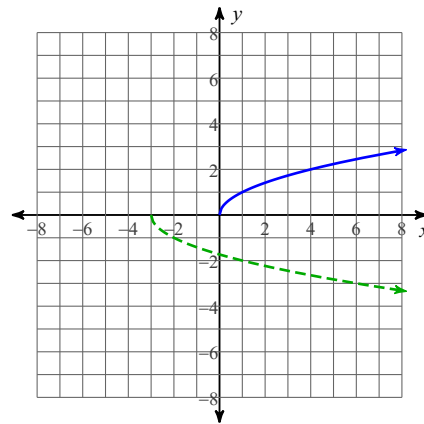
Write $g(x)$ (dashed line) in terms of $f(x)$ (solid line).

1)



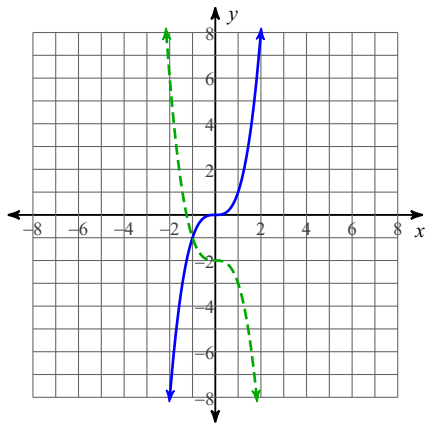
$$g(x) = f(x + 1) - 2$$

2)



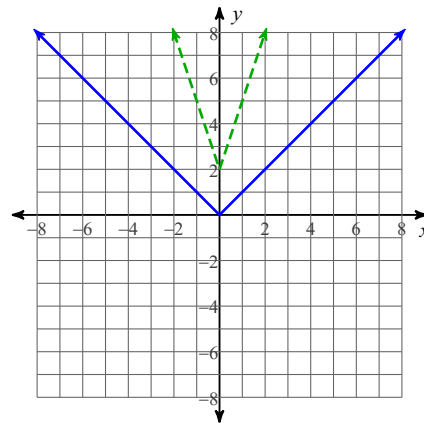
$$g(x) = -f(x + 3)$$

3)



$$g(x) = -f(x) - 2$$

4)



$$g(x) = 3f(x) + 2$$

Transform the given function $f(x)$ as described and write the resulting function as an equation.

5) $f(x) = |x|$

expand vertically by a factor of 3
translate left 3 units

$$g(x) = 3|x + 3|$$

6) $f(x) = x^3$

expand vertically by a factor of 3
reflect across the x-axis
shift up 5 units

$$g(x) = -3x^3 + 5$$

7) $f(x) = x^2$

reflect across the x-axis
translate left 2 units

$$g(x) = -(x + 2)^2$$

8) $f(x) = \sqrt{x}$

expand vertically by a factor of 3
reflect across the x-axis
translate left 3 units

$$g(x) = -3\sqrt{x + 3}$$