

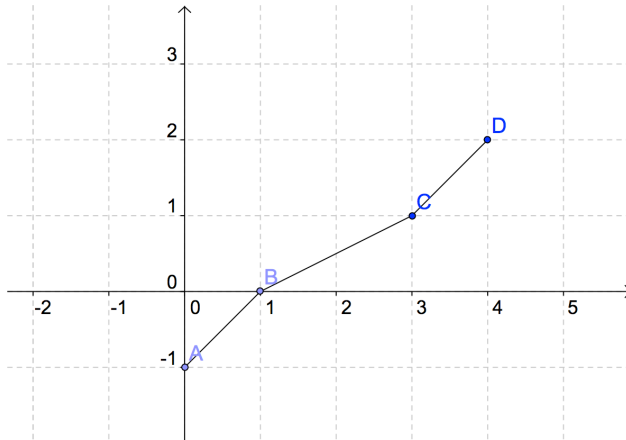
Given the function  $f(x)$  (assume the lines between each point are straight)

A (0, -1)

B (1, 0)

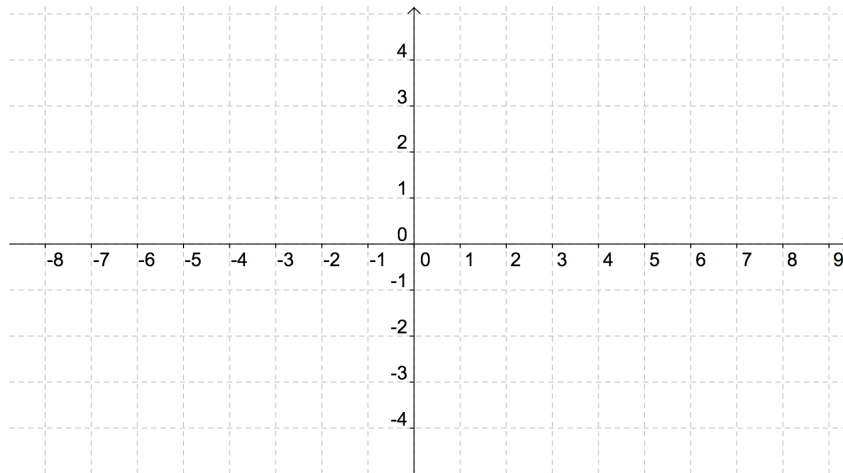
C (3, 1)

D (4, 2)

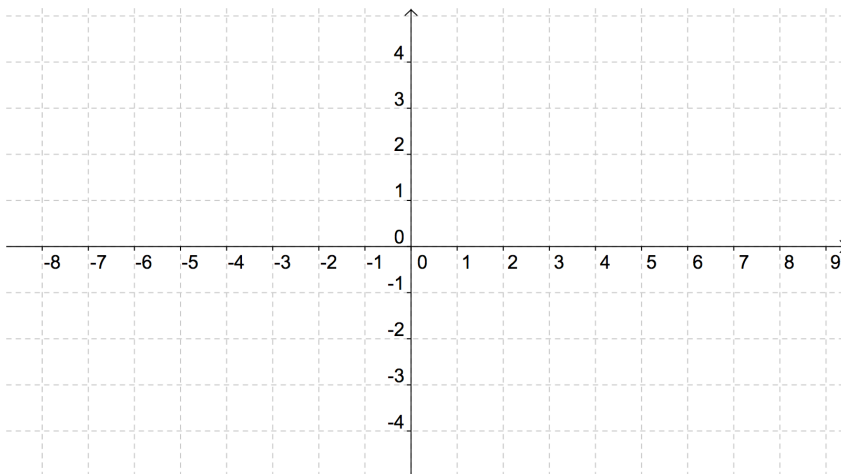


Sketch a the following transformations of  $f(x)$ . Mark the 4 transformed points.

1.  $y=f(x)+2$



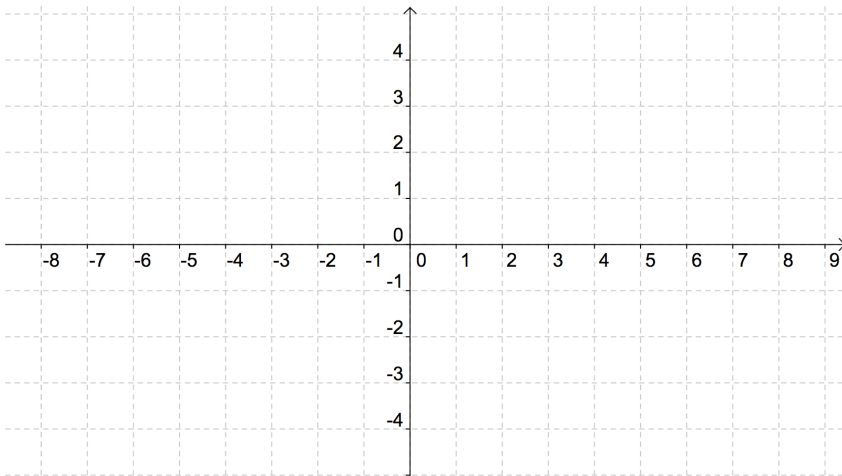
2.  $y=-f(x)$



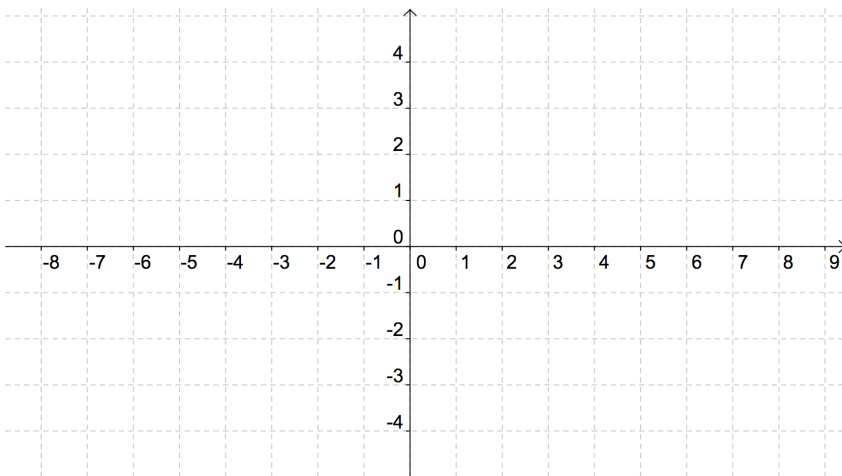
3.  $y=f(x-2)$



4.  $y=2f(x)$

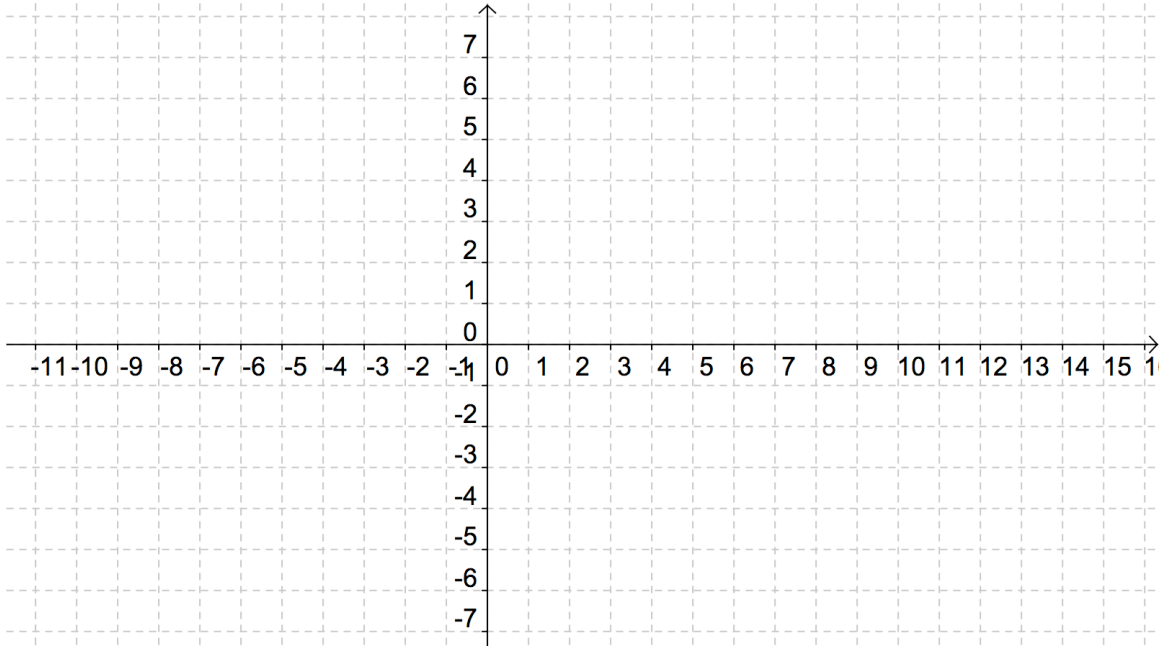
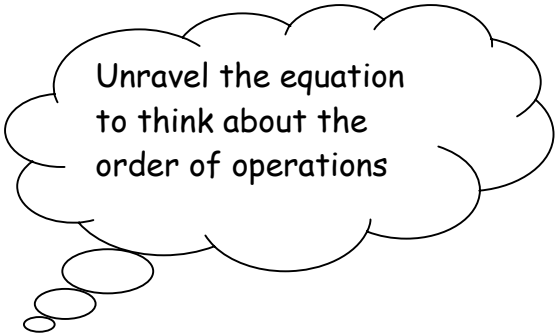


5.  $y=f(-\frac{1}{2}x)$



6.  $y = -2f(\frac{1}{3}x - 1) + 3$

Hint: Factor out the  $\frac{1}{3}$ .



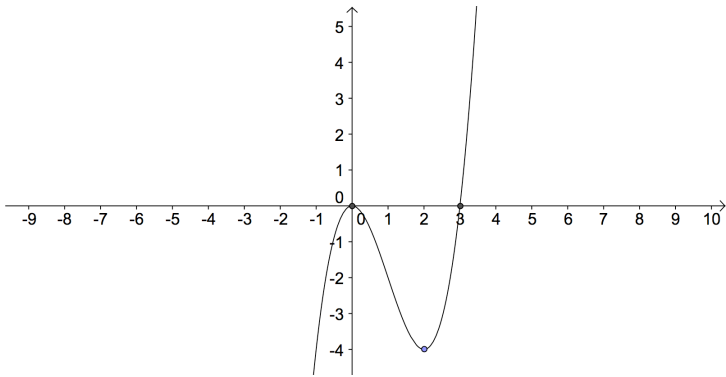
7. Describe the sequence of transformations from f to g.

$f(x) = x^3$        $g(x) = -\frac{1}{4}(x+2)^3 - 2$

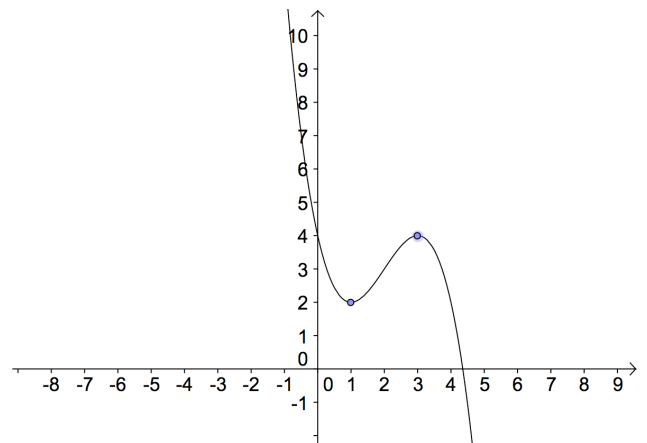
(x, y) becomes (      ,      )

8. Use the graph of  $f(x) = x^3 - 3x^2$  to write the formula for the function  $g(x)$  shown below.

$f(x)$



$g(x)$



$f(x)$	$g(x)=af(b(x-c))+d$	x coordinate:	y coordinate:
$(x, y)$	$(\frac{x}{b} + c, ay + d)$		
$(0,0)$	$(1,2)$	$\frac{0}{b} + c = 1$	$a \cdot 0 + d = 2$
$(2,-4)$	$(3,4)$	$\frac{2}{b} + c = 3$	$a(-4) + d = 4$