5.2 Transformations of Functions, Pt 2

PRACTICE

Directions: Describe all the transformations on the given function.

1) $f(x) = 2(x-5)^2 - 2$

Horizontal shift right 5, vertical shift down 2, Vertical stretch of 2

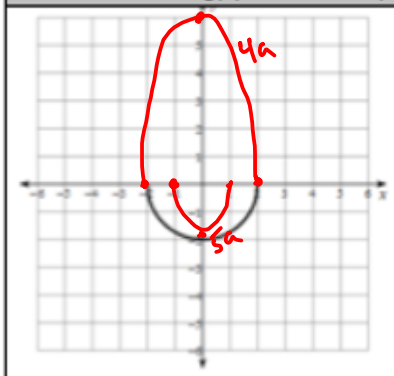
2) $g(x) = -\left(\frac{1}{2}(x+6)\right)^3 + 9$

Horizontal shift left 6 ,vertical shift up 9, horizontal stretch of 2, and a vertical reflection

3) $h(x) = -\frac{1}{3}|x| - 8$

Vertical shift down 8, vertical compression of 1/3, and a vertical reflection.

Directions: Write g(x) in terms of f(x) after performing the given transformation of the graph f(x).



4a) Transform the graph with a vertical stretch of -3.

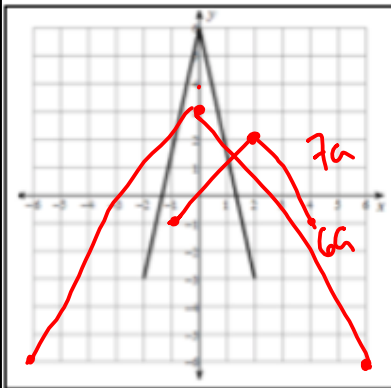
b) Write g(x) in terms of f(x).

$g(x) = -3 \cdot f(x)$

5a) Transform the graph with a horizontal compression of $\frac{1}{2}$.

b) Write g(x) in terms of f(x).

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



6a) Transform the graph with a horizontal stretch of 3 and a vertical shift of -3.

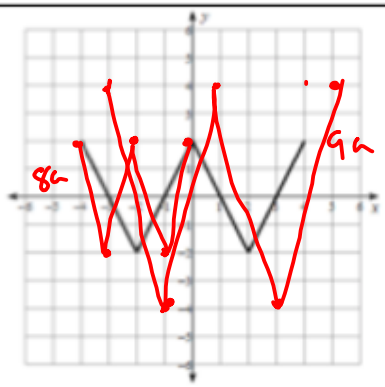
b) Write g(x) in terms of f(x).

$g(x) = f(\frac{1}{3}x) - 3$

7a) Transform the graph with a vertical compression of $\frac{1}{3}$ and a horizontal shift of right 2.

b) Write g(x) in terms of f(x).

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



8a) Transform the graph with a horizontal compression of $\frac{1}{2}$ and a horizontal shift left 2 units.

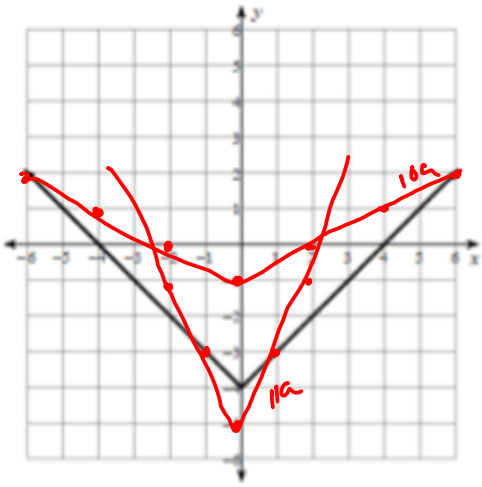
b) Write g(x) in terms of f(x).

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

9a) Transform the graph with a vertical stretch of 2 and a horizontal shift right of 1 unit.

b) Write g(x) in terms of f(x).

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



10a) Transform the graph with a horizontal stretch of 2 and a vertical shift of 3.

b) Write g(x) in terms of f(x).

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

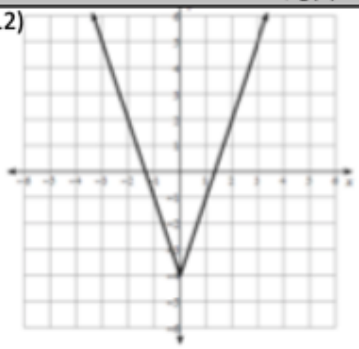
11a) Transform the graph with a vertical stretch of 2 and vertical shift down 1 unit.

b) Write g(x) in terms of f(x).

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

Directions: Write a function, g(x) that is a translation of the parent function.

12)

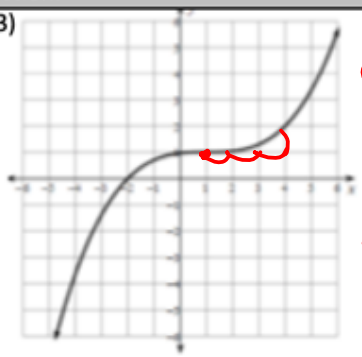


$f(x) = 3|x| - 4$

OR

$f(x) = |3x| - 4$

13)

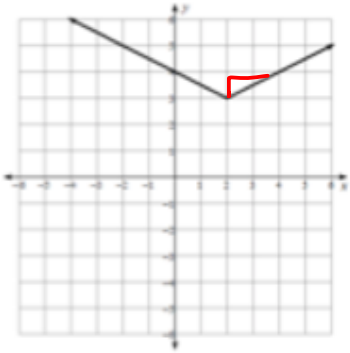


$g(x) = (\frac{1}{3}(x-1))^3 + 1$

OR

$g(x) = \frac{1}{27}(x-1)^3 + 1$

14)

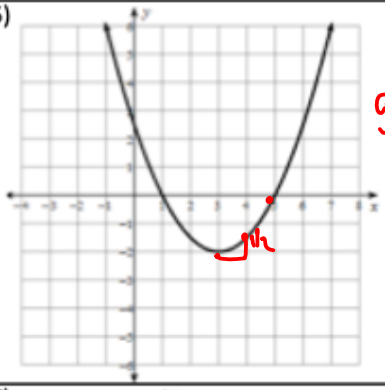


$f(x) = \frac{1}{2}|x-2| + 3$

OR

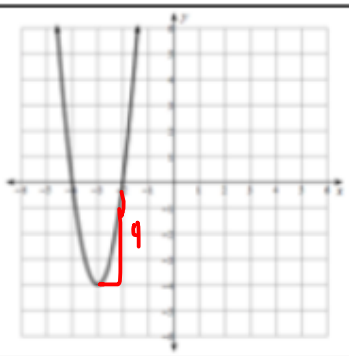
$f(x) = |\frac{1}{2}(x-2)| + 3$

15)



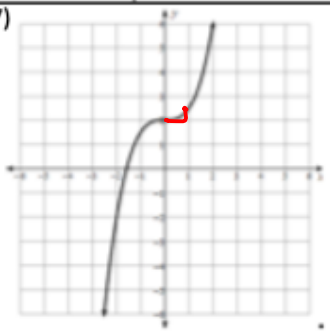
$g(x) = \frac{1}{2}(x-3)^2 - 2$

16)



$f(x) = 4(x+3)^2 - 4$

17)



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