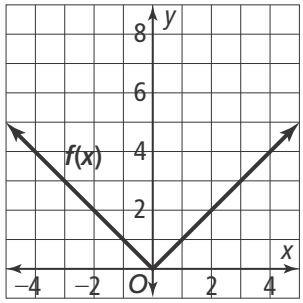
1-2 Additional Practice

Transformations of Functions

1. Graph the function $g(x) = |x| + 4$ as a translation of the parent function f shown. How did the transformation affect the domain and range?



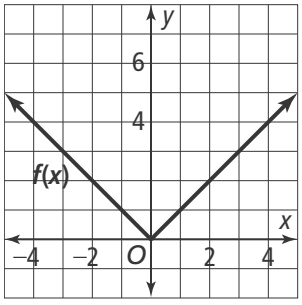
For Items 2 and 3, what is the equation for each reflected graph of $f(x) = x^2 - 4$?

2. Reflect across the x-axis.

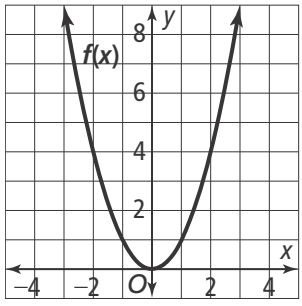
3. Reflect across the y-axis.

Graph each function as a vertical stretch or compression of the parent function f.

4. $g(x) = 4.5|x|$



5. $g(x) = 0.5x^2$

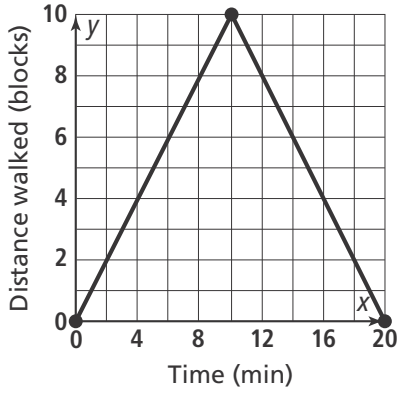


What transformations of $f(x) = x^2$ are applied to get the function g?

6. $g(x) = 3(x + 2)^2$

7. $g(x) = -(x - 5)^2 + 1$

8. Derek walks to his best friend's house at a rate of 1 block per minute, then turns around and walks home. The graph shows the distance Derek walks in the given amount of time. Write an equation for the graph.

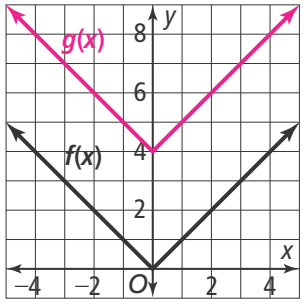


9. Given the parent function $f(x) = x^2$, what is the new equation if the function is translated 4 units to the right and 3 units down?

1-2 Additional Practice

Transformations of Functions

1. Graph the function $g(x) = |x| + 4$ as a translation of the parent function f shown. How did the transformation affect the domain and range?



Domain of $f(x)$ and $g(x)$ are the same. Range values are $f(x) = y \geq 0$ and $g(x) = y \geq 4$.

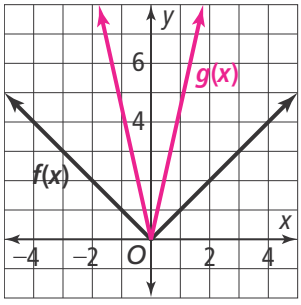
For Items 2 and 3, what is the equation for each reflected graph of $f(x) = x^2 - 4$?

2. Reflect across the x-axis. **$f(x) = -x^2 + 4$**

3. Reflect across the y-axis. **$f(x) = x^2 - 4$**

Graph each function as a vertical stretch or compression of the parent function f.

4. $g(x) = 4.5|x|$



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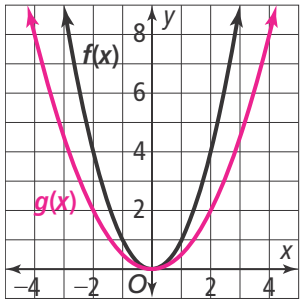


What transformations of $f(x) = x^2$ are applied to get the function g?

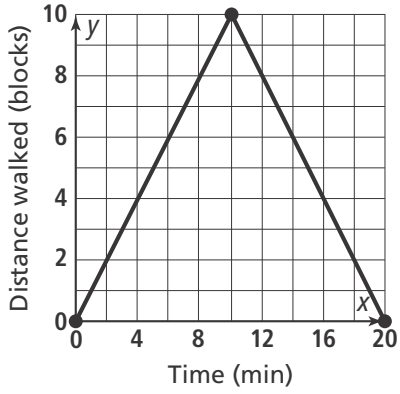
6. $g(x) = 3(x + 2)^2$

translation of 2 units to the left; vertical stretch by 3

7. $g(x) = -(x - 5)^2 + 1$

translation of 5 units to the right; reflection across x-axis; vertical translation up 1

8. Derek walks to his best friend's house at a rate of 1 block per minute, then turns around and walks home. The graph shows the distance Derek walks in the given amount of time. Write an equation for the graph.



$g(x) = -|x - 10| + 10$

9. Given the parent function $f(x) = x^2$, what is the new equation if the function is translated 4 units to the right and 3 units down?

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