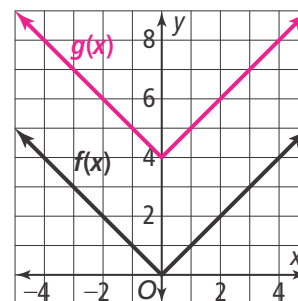# 1-2 Additional Practice

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 $g(x) = y \geq 4$.

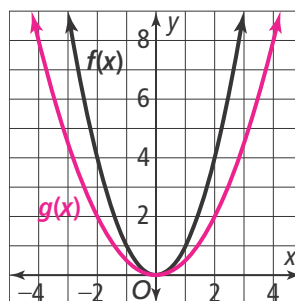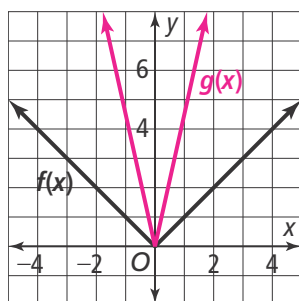For Items 2 and 3, what is the equation for each reflected graph of $f(x) = x^2 - 4$?

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

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

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

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

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?

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