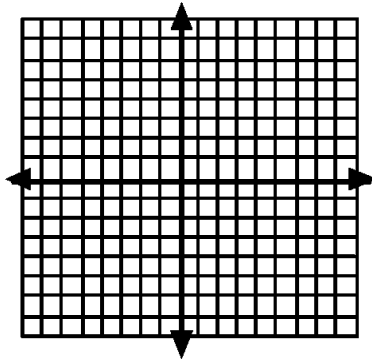
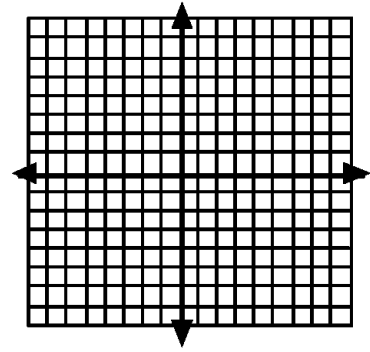


Identify the parent function of each given equation and graph the parent function. Then graph the given equation. Determine if the translation is a shift, reflection, stretch or shrink and describe the translation.

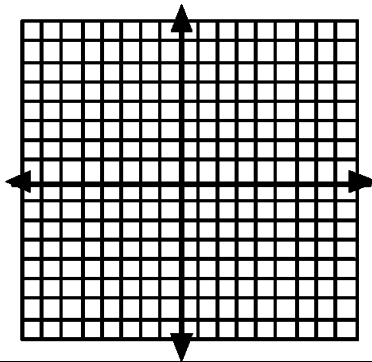
1. $f(x) = x - 2$



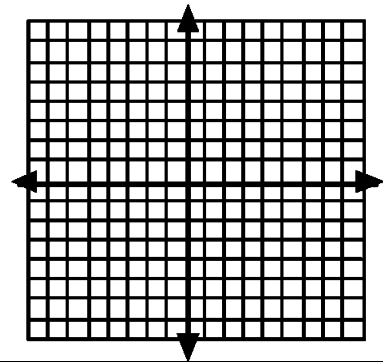
2. $f(x) = -x$



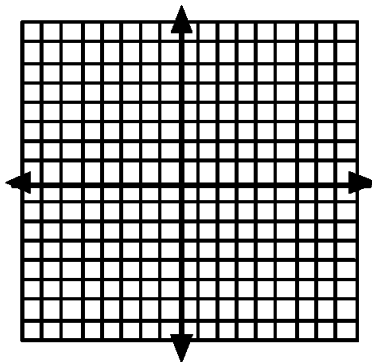
3. $f(x) = 4x$



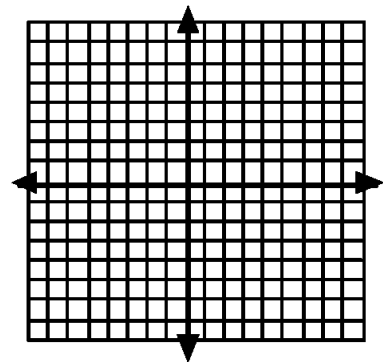
4. $f(x) = -\frac{1}{2}x + 1$



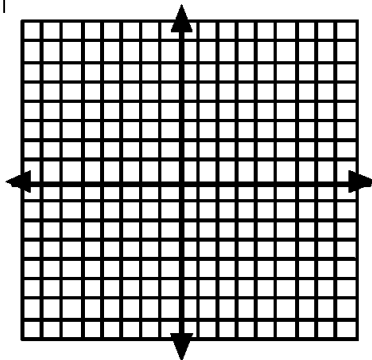
5. $g(x) = |x| + 4$



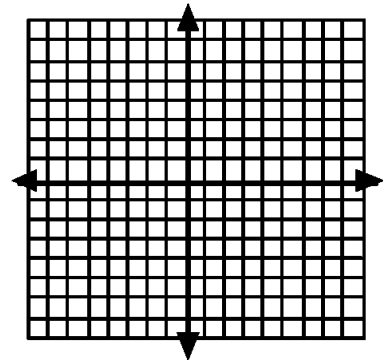
6. $f(x) = |x| - 2$



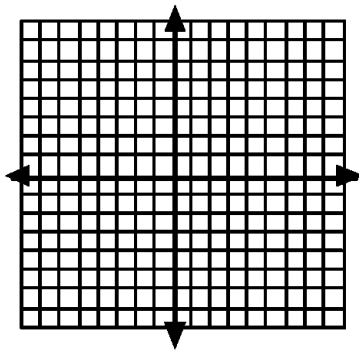
7. $f(x) = |x - 2|$



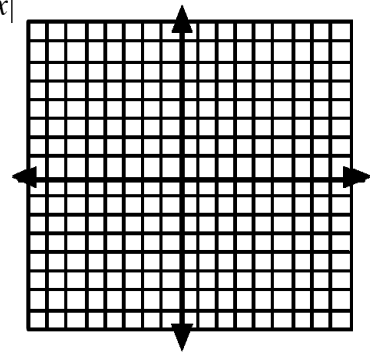
8. $f(x) = |x + 3|$



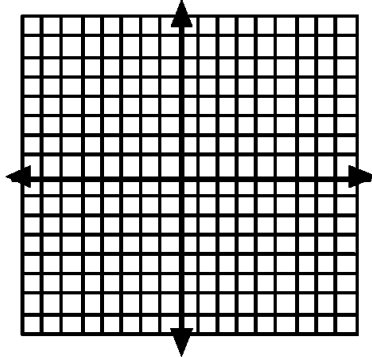
9. $h(x) = \frac{1}{5}|x|$



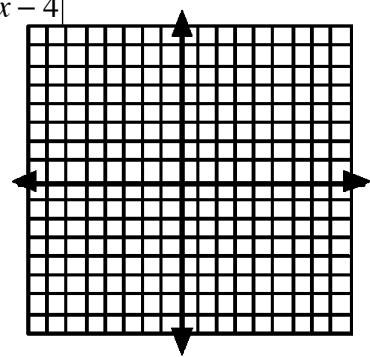
10. $f(x) = 3|x|$



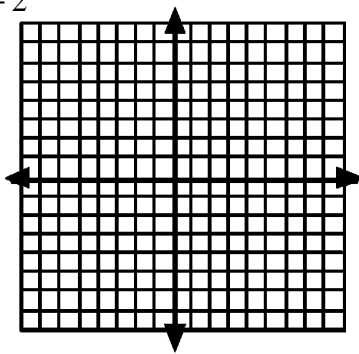
11. $f(x) = -|x|$



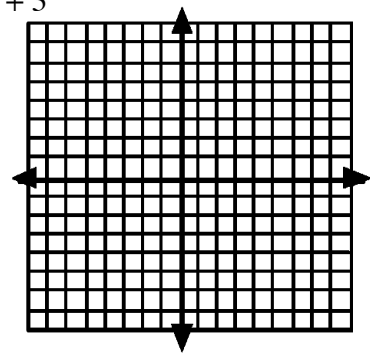
12. $f(x) = -|x - 4|$



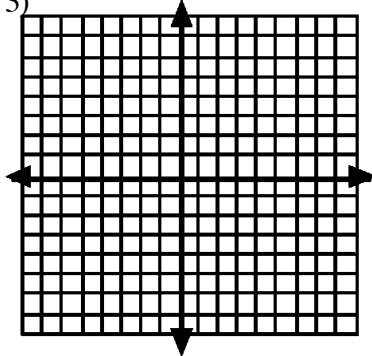
13. $f(x) = x^2 - 2$



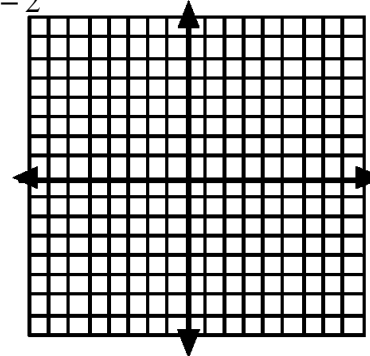
14. $n(x) = x^2 + 3$



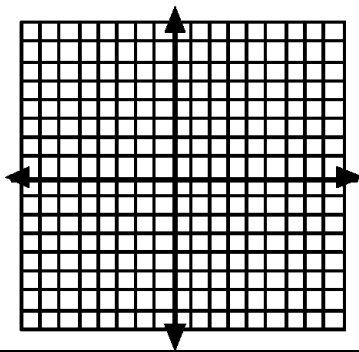
15. $g(x) = (x - 3)^2$



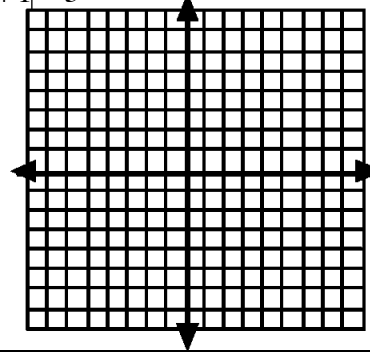
16. $r(x) = x^2 - 2$



17. $g(x) = 4$

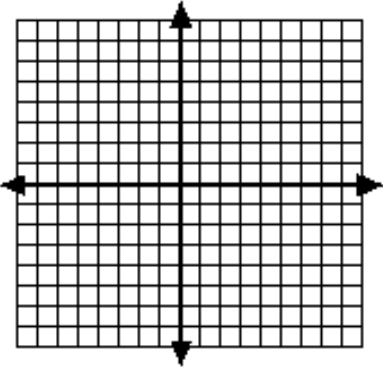
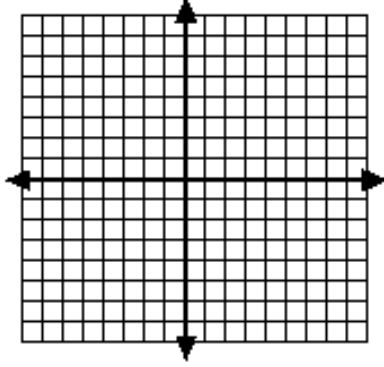
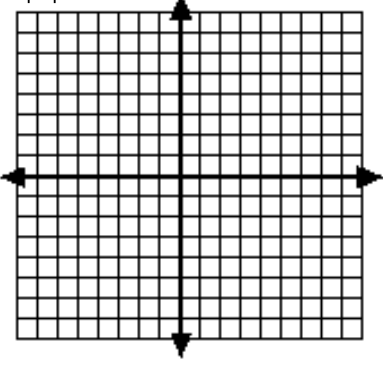
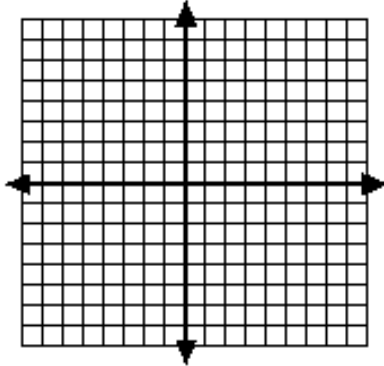


18. $g(x) = |x + 1| - 3$



Algebra 2
Chapter 2.7 Lab

Sketch the graph of each of the following common functions (parent functions).

<p>Constant Function $f(x) = c$</p> 	<p>Identify Function $f(x) = x$</p> 
<p>Absolute Value Function $f(x) = x$</p> 	<p>Quadratic Function $f(x) = x^2$</p> 

Horizontal and Vertical Shifts: c is a positive real number

Vertical Shift of c units upward

$$h(x) = f(x) + c$$

Vertical Shift of c units downward

$$h(x) = f(x) - c$$

Horizontal Shift of c units to the right

$$h(x) = f(x - c)$$

Horizontal Shift of c units to the left

$$h(x) = f(x + c)$$

Reflections in Coordinate Axes:

Reflections in

Transformation

Effect on Coordinates

x - axis

$$h(x) = -f(x)$$

$$(x, y) \rightarrow (x, -y)$$

Stretches and Shrinks (condense):

Original

Vertical Stretch

Vertical Shrink (condense)

$$y = f(x)$$

$$y = c \cdot f(x) \text{ and } c > 1$$

$$h(x) = c \cdot f(x) \text{ and } 0 < c < 1$$