

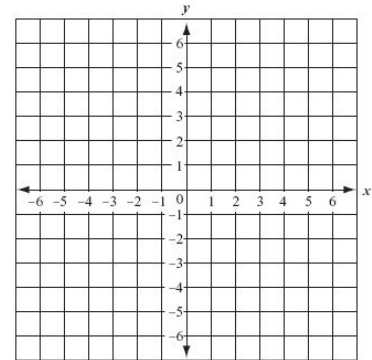
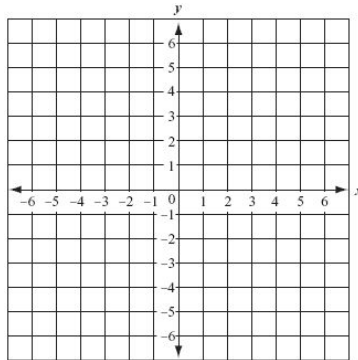
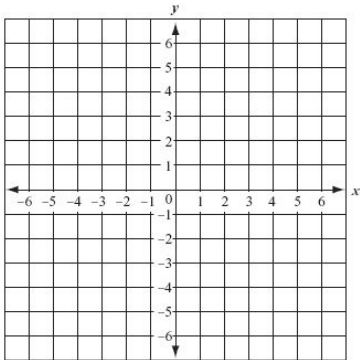
Absolute Value and Quadratic Function Transformation Test Practice Problems

For 1-6, describe the transformation(s) and graph.

1.) $f(x) = -3x^2$

2.) $f(x) = |x + 3| - 3$

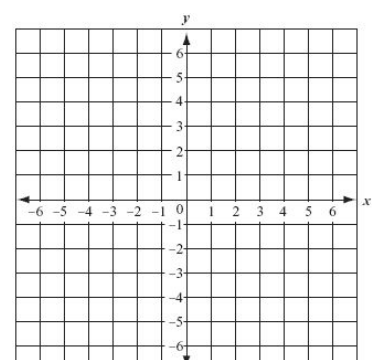
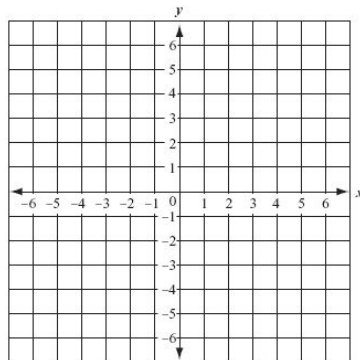
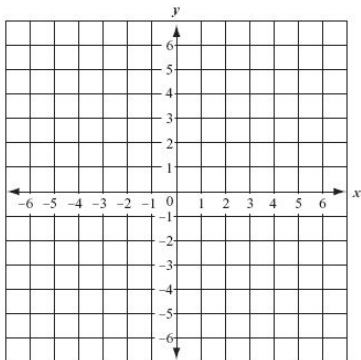
3.) $f(x) = \frac{1}{2}|x - 2|$



4.) $f(x) = -(x - 1)^2 + 1$

5.) $f(x) = 2|x|$

6.) $f(x) = 2x^2 - 3$



For 7-10, write a function g whose graph has the given transformations. Show all work.

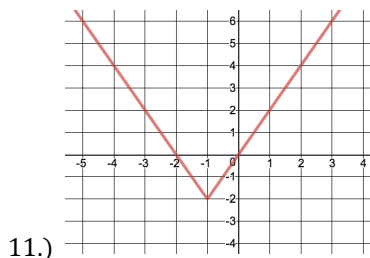
7.) $f(x) = 2x^2 + 4$; translation down 12 units

8.) $f(x) = (x + 3)^2 - 4$; reflection over the vertex, translation 6 units right

9.) $f(x) = \frac{3}{4}|x + 2| - 1$; vertical stretch by a factor of 4

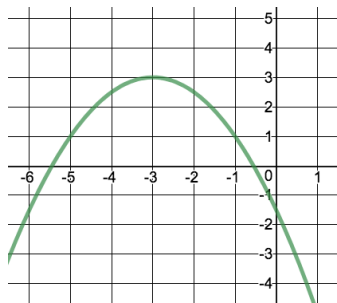
10.) $f(x) = -|x - 3| - 1$; reflected over the vertex, vertical shrink by $\frac{1}{9}$

For 11-14, give the information in the box. To find the equation, show any applicable work. Be sure to use interval notation.



<p>Transformations: _____</p> <p>_____</p> <p>Equation: _____</p> <p>Domain: _____</p> <p>Range: _____</p> <p>Axis of symmetry: _____</p> <p>Intervals of increasing: _____</p> <p>Intervals of decreasing: _____</p> <p>Maximum: _____</p> <p>Minimum: _____</p>

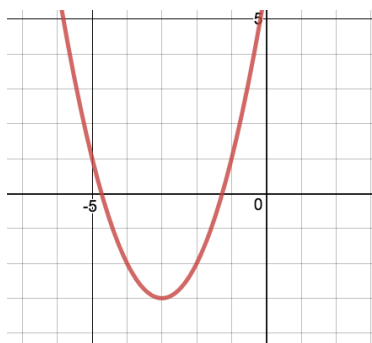
12.)



Transformations: _____

 Equation: _____
 Domain: _____
 Range: _____
 Axis of symmetry: _____
 Intervals of increasing: _____
 Intervals of decreasing: _____
 Maximum: _____
 Minimum: _____

13.)



Transformations: _____

 Equation: _____
 Domain: _____
 Range: _____
 Axis of symmetry: _____
 Intervals of increasing: _____
 Intervals of decreasing: _____
 Maximum: _____
 Minimum: _____

14.) The graph below shows the height $h(t)$ in feet of a small rocket t seconds after it is launched. The path of the rocket is given by the equation: $h(t) = -16t^2 + 128t$.

- What is the vertex? What does it represent in this context?
- Using your knowledge of transformations of functions, write the equation for the parabola in vertex form.
- What is the interval where the function is increasing? What does this represent in the context of this question?
- What is the interval where the function is decreasing? What does this represent in the context of this question?

