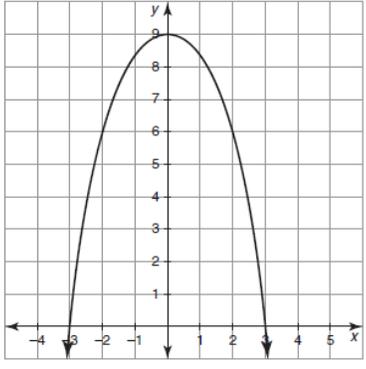
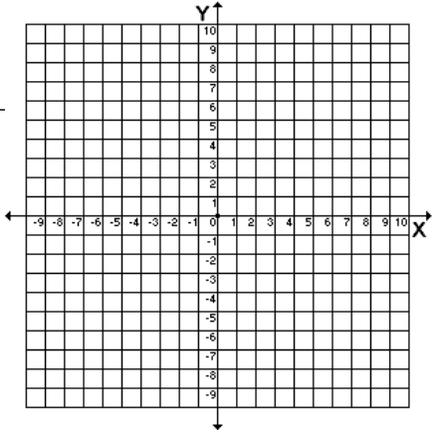
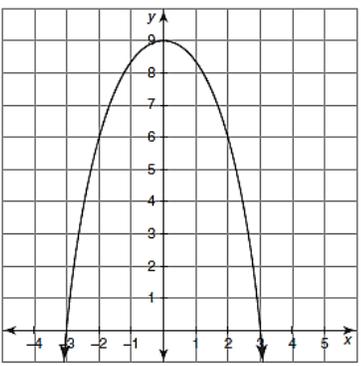
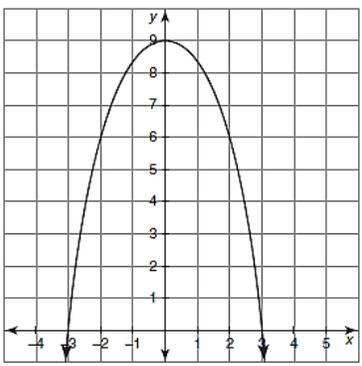


Learning Target #1: Transformations and Characteristics of Quadratic Functions

Vertex Form: $y = a(x - h)^2 + k$
 Standard Form: $y = ax^2 + bx + c$
 Intercept Form: $y = a(x - p)(x - q)$

<p>1. How would you shift the parent function $y = x^2$ to the graph function $y = (x + 3)^2 - 9$</p>	<p>2. Determine the vertex of the quadratic equation: $f(x) = -3(x - 2)^2 + 5$</p>
<p>3. <i>Create a function using transformations</i> Determine your, a, h, and k values</p> <p>Opens down, shifts up 3 units and shrinks by $\frac{1}{4}$</p> <p>Shifts left 5 and reflects across the x-axis</p>	<p>4. What is the minimum or maximum point for the quadratic equation $y = x^2 + 4x + 7$?</p>
<p>5. <i>Characteristics:</i></p> <p>Vertex: _____</p> <p>Axis of Sym: _____</p> <p>Extrema: _____</p> <p>Max/Min Value: _____</p>	<p>6. <i>Characteristics:</i></p> <p>Domain: _____</p> <p>Range: _____</p> <p>x-intercepts: _____</p> <p>zeros: _____</p> <p>y-intercept: _____</p>
<p>7. $y = x^2 - 2x - 8$</p> <p>Vertex: _____</p>	<p>8. What is the equation of the parabola to the right?</p>



Learning Target #2: Graphing Quadratic Equations and Interpreting Their Different Forms	
1.	Convert the following to standard form: $y = 2(x + 7)^2 + 1$ Standard Form: Y-intercept: Opens:
2.	Convert the following to vertex form: $y = 3x^2 - 18x + 17$
3.	$y = -x^2 - 4x - 8$ What is the vertex of the function? A. A minimum point, (-2, -12). B. A maximum point, (-2, -12). C. A minimum point, (-2, 4). D. A maximum point, (-2, -4).
4.	Which function has its vertex below the x-axis? A. $f(x) = (x - 7)^2$ B. $f(x) = -2x^2$ C. $f(x) = -(x + 3)^2$ D. $f(x) = x^2 - 8$
5.	The height in feet of a rocket after x second is given by $y = -16x^2 + 128x$. What is the maximum height reached by the rocket and how long does it take to reach that height?
6.	A football is kicked into the air. Its height, in meters, after t seconds is given by $h = -4.9(t - 2.4)^2 + 29$. a. What is the maximum height of the ball? b. How high was the ball after 2 seconds?
7.	The arch of bridge is modeled by the equation $y = -\frac{1}{4}(x - 50)^2 + 95$, where x represent the horizontal distance (in feet) and y represents the vertical distance (in feet). What is the maximum height of the arch?
8.	The valley between two mountains whose peaks touch the x-axis is $y = 40.4x^2 - 404x$, where x and y are measured in feet. How deep is the valley?