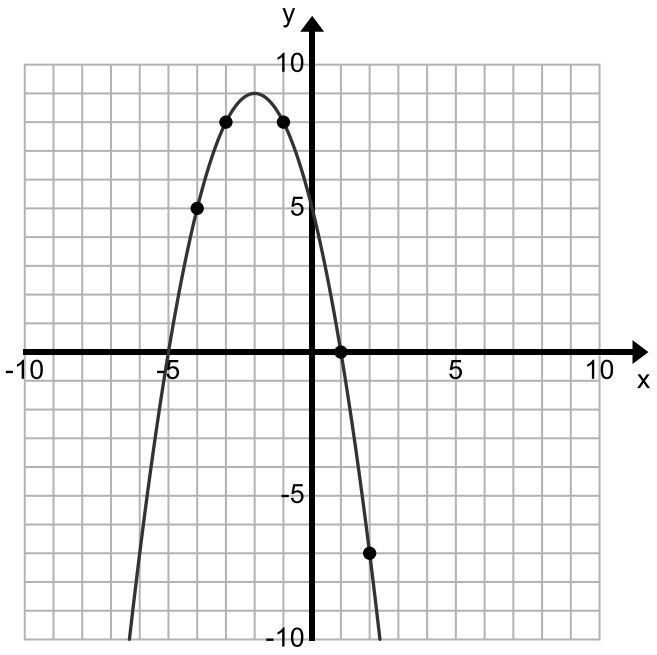
Math 20-2 **Name: _____**

Quadratic Function Properties: Part Two

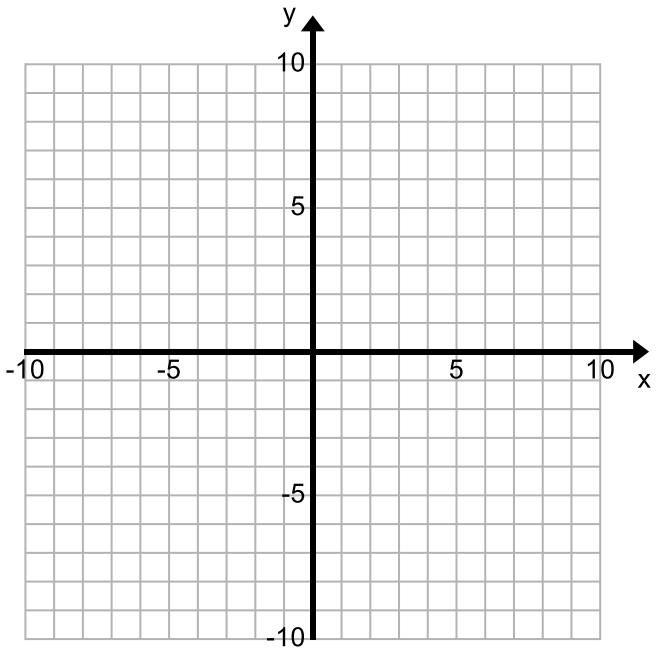
1. Given the graph of the function:
   - find the vertex
   - sketch in the axis of symmetry and write the equation for the axis of symmetry
   - plot and identify **3** other points on the graph using the property of symmetry
   - identify the x – intercepts (on the graph, coordinates)
   - identify the y – intercept (on the graph, coordinates)
   - write the domain and range



2. Given the equation of the quadratic function:
   - find points to plot using algebra or trace or a table of values
   - identify the x – intercepts (on the graph, coordinates)
   - identify the y – intercept (on the graph, coordinates)
   - identify the vertex (on the graph, coordinates)
   - write the equation for the axis of symmetry
   - write the domain and range

$$y = \frac{1}{2}x^2 + 2x - 6$$

X	Y
-6	
-4	
-2	
0	
2	
4	
6	



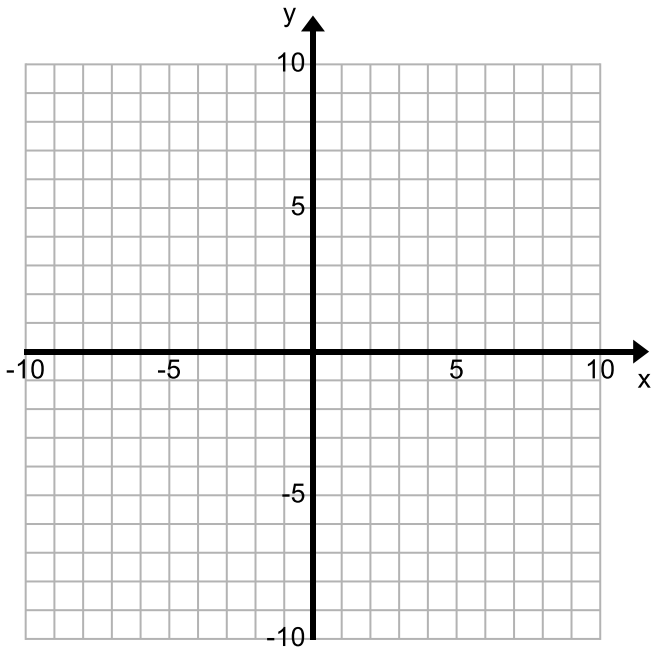
3. Find the quadratic equation [use regression skills] and draw the graph for the following:

X	***Y***
-3	**0**
-2	**-2**
0	**0**
1	**4**

a) Equation:
$y = ax^2 + bx + c$
$a =$
$b =$
$c =$

b) Plot the given points, plot at least 3 more points and draw the graph.

c) Find the vertex.



4. A football player stands on the top of the bleachers and throws the football towards the field. The height of the football is given by the equation: $h = -0.4t^2 + 2.1t + 3.25$, where t is the time in seconds and h is the height of the football in metres. $[y = -0.4x^2 + 2.1x + 3.25]$
   a) Sketch the path of the football using the window:
      X: [-2,8,1]
      Y:[-2,8,1]

   b) Find the height the football was thrown from [use Trace].

   c) Find the maximum height of the football [use Maximum].

   d) Find how long the football is in the air [use Zero].

   e) Find when the football has a height of 2.0 metres [use Intersect].