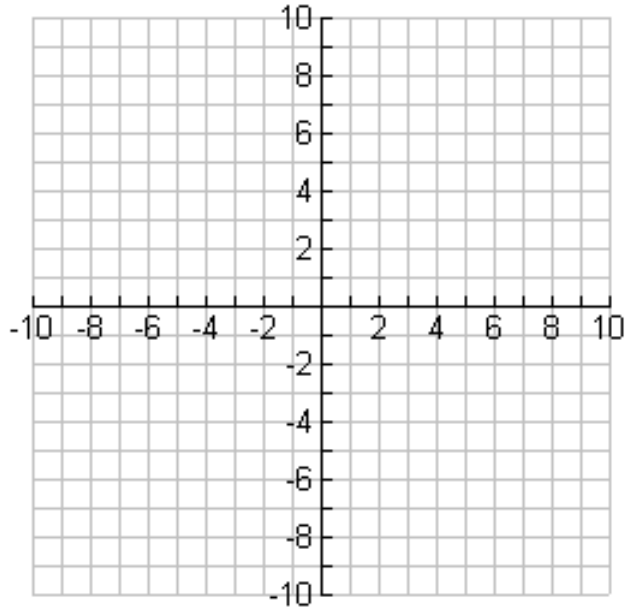


**Google vocabulary that you don't recognize**

1. Graph the function  $y = x^2$  - Check with calculator: Enter in Y= and explore TABLE

x	$y = x^2$ .....
-3	$(-3)^2 =$
-2	
-1	
0	
1	
2	
3	



- The graph of a quadratic function is called \_\_\_\_\_

- The Vertex of this graph is the point \_\_\_\_\_

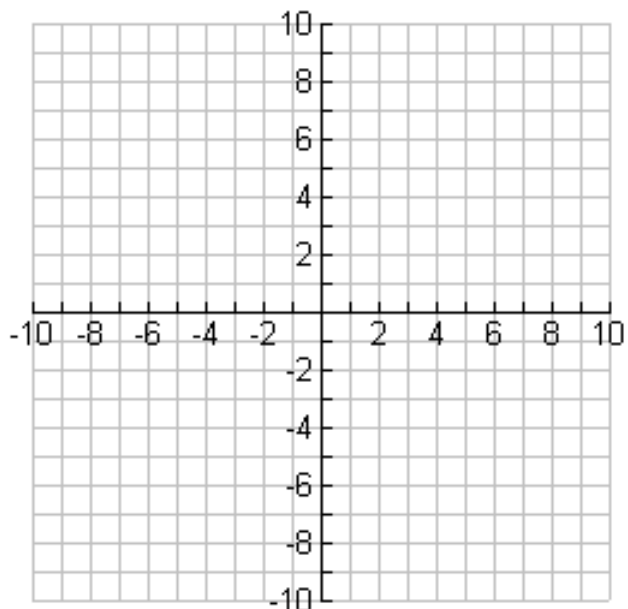
- The minimum value of this function is \_\_\_\_\_

- Sketch the line of symmetry

- The parabola opens \_\_\_\_\_

2. Graph the function  $y = -x^2 + 2x + 1$  – Enter function in Y=; explore the TABLE (2<sup>nd</sup> GRAPH)

x	$y = -x^2 + 2x + 1$ .....
-3	$-(-3)^2 + 2(-3) + 1 =$ .....
-2	
-1	
0	
1	
2	
3	
4	



- The graph of a quadratic function is called \_\_\_\_\_

- The Vertex of this graph is the point \_\_\_\_\_

- The maximum value of this function is \_\_\_\_\_

- Sketch the line of symmetry

- The parabola opens \_\_\_\_\_

**Finding the coordinates of the vertex of a quadratic function  $f(x) = ax^2 + bx + c$**

3. Go to my website, get into the QUADRATIC FUNCTIONS page, click on the document [24-SK-Quadratic Functions - Find Vertex](#). Read through and complete the following.

a) How do you find the x-coordinate of the vertex?

b) How do you find the y-coordinate of the vertex?

c) Go through the first two examples in the power point and take notes below

**EXAMPLE 1**

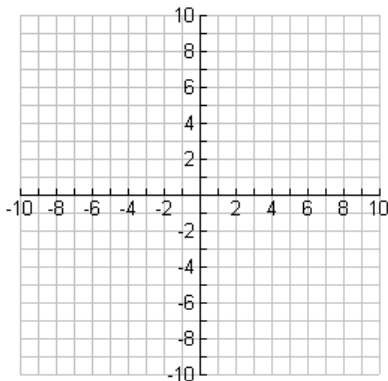
a) Write the function

b) Find the vertex – show work

The vertex is the point V(.....)

c) graph

x	y.....



The minimum value of this function is \_\_\_\_\_

**EXAMPLE 2**

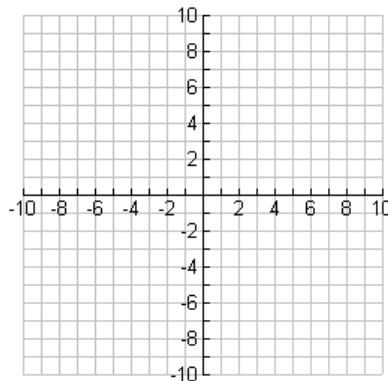
d) Write the function

e) Find the vertex – show work

The vertex is the point V(.....)

f) graph

x	y.....



The minimum value of this function is \_\_\_\_\_

Using the quadratic formula to solve quadratic equations of the form  $ax^2 + bx + c = 0$

4. Go to my website, get into the QUADRATIC FUNCTIONS page, click on the document [26-SK-Quadratic Formula](#) Read through and complete the following.

To solve the quadratic equation of the form  $ax^2 + bx + c = 0$

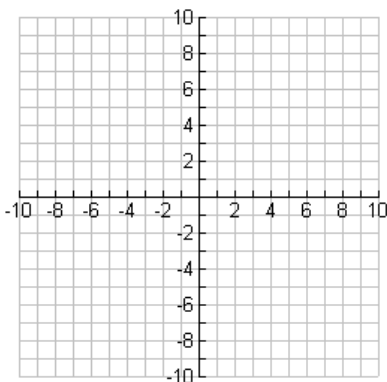
We use the quadratic formula (write it here) \_\_\_\_\_

EXAMPLE 1 – bottom of slide 3 and slide 4

- a) Solve the equation  
 $x^2 - 6x + 8 = 0$
- b) Give the values of  
a =        b =        c =
- c) Solve by using the quadratic formula – show work

d) Graph

x	$y = x^2 - 6x + 8$
0	
1	
2	
3	
4	
5	
6	

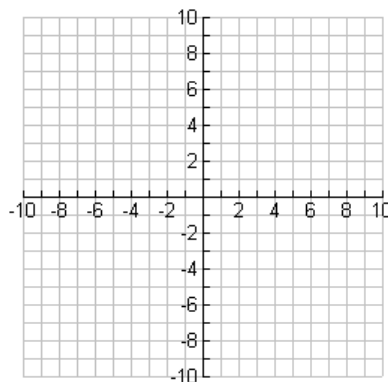


EXAMPLE 2 – Slides 5 and 6

- a) Solve the equation  
 $2x^2 - 10x + 3 = 0$
- b) Give the values of  
a =        b =        c =
- c) Solve by using the quadratic formula – show work

d) graph

x	$y = 2x^2 - 10x + 3$
-1	
0	
1	
2	
3	
4	
5	



5. Read the power point presentation [25-APP-Quadratic Functions](#)

Example

A fireworks shell is launched into the air. The shell's height (in feet)  $h = f(t)$  at time  $t$  seconds is modeled well by the function  $f(t) = -16t^2 + 200t + 1$ . When should the shell explode so that it goes off at the maximum height? What is that height?



- a) Show here the work to answer the questions on this problem
- i. When should the shell explode so that it goes off at the maximum height?
  
  
  
  
  
  
  
  
  
  
  - ii. What is that maximum height?
- b) Now find  $h(4)$  and interpret in context.
- c) Find the  $h$ -intercept and interpret in context.