

Algebra 9-3: Graphing on a Graphing Calculator

Warm-Up

Graph without a calculator.

1. $y = x^2 - 6x + 6$

a. Identify the vertex.

$(3, -3)$

b. Is there a max or min?

min

c. Identify the y-intercept.

$y = 6$ (0, 6)

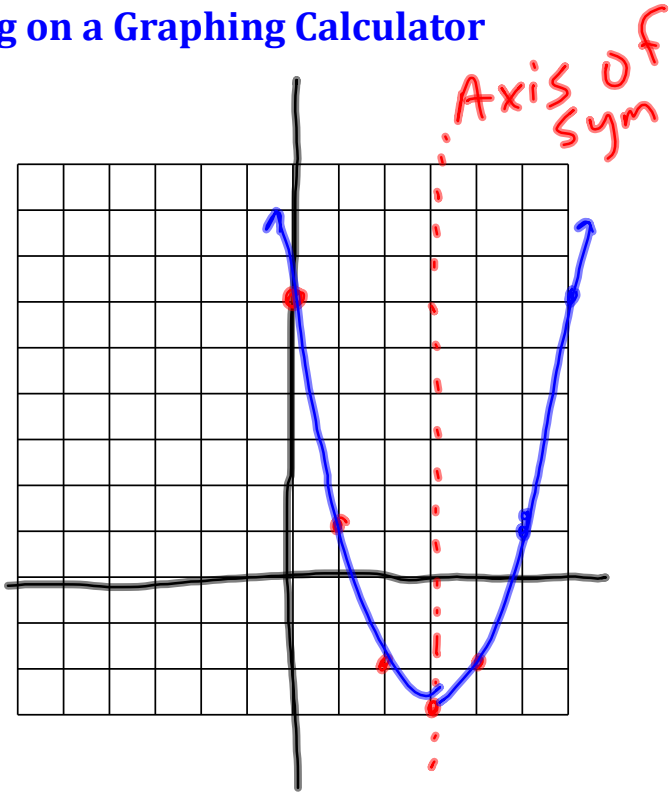
d. Identify the x-intercept.

$\approx 1.2, 4.7$

e. Identify the line of symmetry.

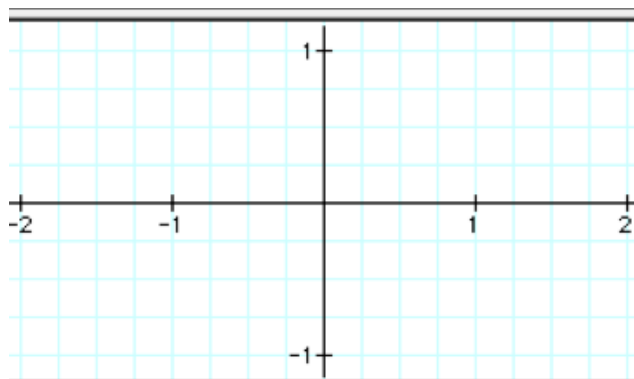
$x = 3$

x	4
-3	33
-2	22
-1	13
0	6
1	1
2	-2
3	-3



Algebra 9-3: Graphing on a Graphing Calculator

Window: what you can see on your screen



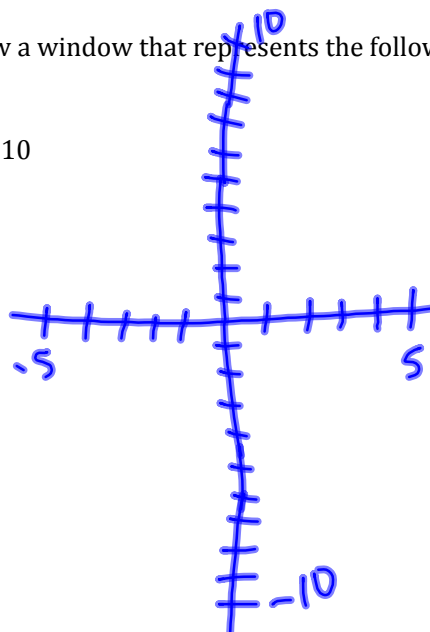
$$-2 < x < 2$$

$$-1 < y < 1$$

Draw a window that represents the following ranges.

$$-5 < x < 5$$

$$-10 < y < 10$$



How to Graph on a Graphing Calculator

1. Press the y= key and type in your equation.
 > Make sure to consider order of operations and use () if you need to.
2. Set the window by pressing Window..
 > Enter X - min and X - max then y - min and y - max.
3. Press graph.
4. Extra Features: table & trace.

Examples

Equation	Vertex	Max. or Min.	Axis of Symmetry	x - intercepts
$y = x^2$	(0,0)	min	$x = 0$	$x = 0$
$y = x^2 - 2x$	(1,-1)	min	$x = 1$	$x = 1, 2$
$y = x^2 - 4x$	(2,-4)	min	$x = 2$	$x = 0, 4$
$y = x^2 - 5x$	(2.5, -6.25)	min	$x = 2.5$	$x = 0, 5$

1. How are the graphs similar?

- > They all were minimums
- > parabolas

2. How are the graphs different?

They all had a different vertex

3. Without graphing, describe the graph of $y = x^2 - 50x$.

It would have a minimum, opens up



Equation	x - intercepts	Vertex	Axis of Symmetry	y - intercept
$y = x^2 - 10x + 21$				
$y = x^2 - 8x + 7$				
$y = x^2 - 4$				

- a. How does the x-coordinate of the vertex relate to the x- intercepts?

- b. How do you easily find the y-intercept of a graph from its equation?

Assignment: 9-3 #'s 3, 7-11, 17-19

#3 a)

$$y = -\frac{1}{2}x^2$$
$$y = -1x^2$$
$$y = -2x^2$$
$$y = -3x^2$$

b) as a gets smaller, the graph gets narrower.

#7) $-10 \leq x \leq 10$
 $-10 \leq y \leq 10$

8)