

Activity

Notes: Graphing Quadratic Equations w/out Intervals (using the axis of symmetry)

Created for you by Ms. Nhotsoubanh

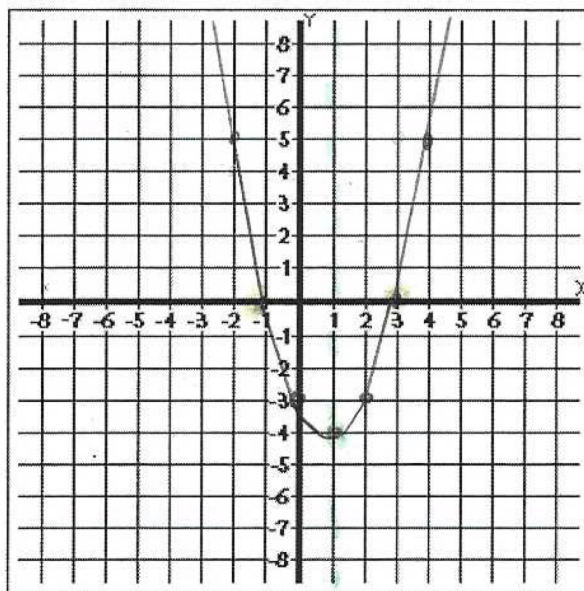
1. Graph $y = x^2 - 2x - 3$. $a = 1$, $b = -2$, $c = -3$

$$x = \frac{-b}{2a} = \frac{-(-2)}{2(1)} = \frac{2}{2}$$

$$x = 1$$

x	y
-2	5
-1	0
0	-3
1	-4
2	-3
3	0
4	5

Vertex



How do you get the intervals of the domain (x-values) for the table if it isn't given to you?

*Find the axis of symmetry and place that # in the middle of the table.
Get 3 values above and below the axis of symmetry for the x-values.*

Using the graph above, state the following:

Vertex: (1, -4)

Axis of symmetry: $x = 1$

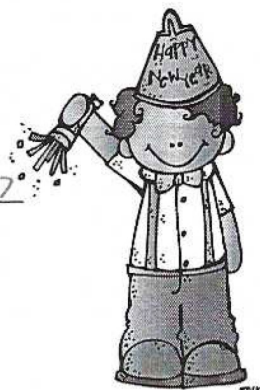
Identify the zeros/roots: $\{-1, 3\}$

Does it have a minimum or maximum? min

What is the y-intercept? (0, -3)

Name: Key

Alg. 1 H - Jan. 3 Glue on page 90



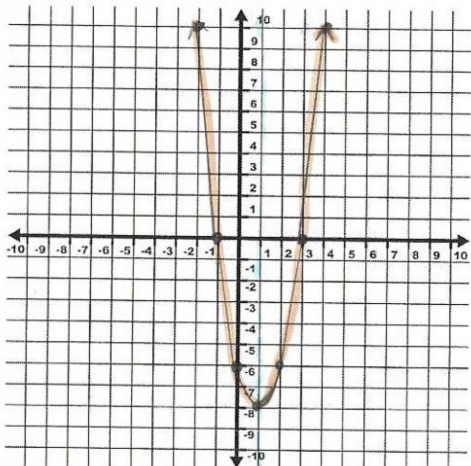
2. Graph $y = 2x^2 - 4x - 6$.

$a = 2, b = -4, c = -6$

$x = \frac{-b}{2a} = \frac{-(-4)}{2(2)}$

$x = 1$

x	y
-2	10
-1	0
0	-6
1	-8
2	-6
3	0
4	10



3. Graph $y = x^2 + 3x - 5$

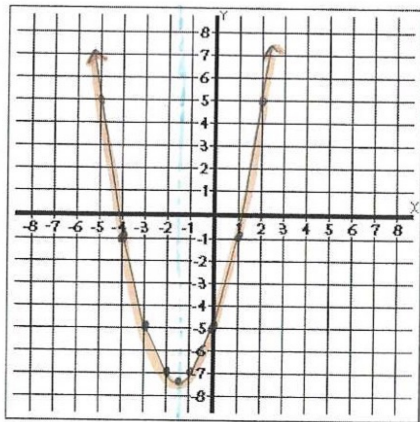
$a = 1, b = 3, c = -5$

$x = \frac{-b}{2a}$

$x = \frac{-(3)}{2(1)} = -1.5$

use and tables width → to change the table increment * type in the x value

x	y
-4	-1
-3	-5
-2	-7
-1.5	-7.25
-1	-7
0	-5
1	-1



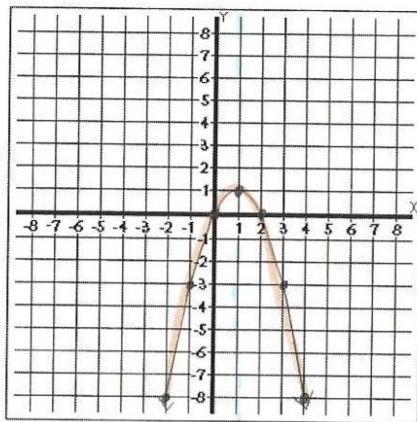
4. Graph $y = -x^2 + 2x$

$a = -1, b = 2, c = 0$

$x = \frac{-b}{2a}$

$x = \frac{-(2)}{2(-1)} = 1$

x	y
-2	-8
-1	-3
0	0
1	1
2	0
3	-3
4	-8



5. Graph $y = -(x-3)(2x+1)$

$a = -2, b = 5, c = 3$

$y = -[x(2x+1) - 3(2x+1)]$

$y = -[2x^2 + x - 6x - 3]$

$y = -[2x^2 - 5x - 3]$

$y = -2x^2 + 5x + 3$

$x = \frac{-b}{2a} = \frac{-(5)}{2(-2)} = 1.25$

x	y
-1	-4
0	3
1	6
1.25	6.125
2	5
3	0
4	-9

