Steps for Graphing in Standard Form

1) Find the vertex.

- Use $x = \frac{-b}{2a}$ to find our x- coordinate of our vertex
- Substitute that x back into our equation, and our solution is the y-coordinate of our vertex.

2) Use your vertex as the center for your table and determine two x values to the left and right of your x- coordinate and substitute those x values back into the equation to determine the y values.

3) Plot your points and connect them from left to right! Your table MUST have 5 points!

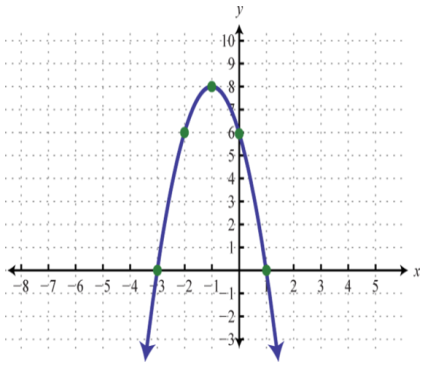
Example: Graph $y = -2x^2 - 4x + 6$

$a = -2 \quad b = -4 \quad c = 6$

$x = \frac{-b}{2a} = \frac{-(-4)}{2(-2)} = \frac{4}{-4} = -1$

$y = -2(-1)^2 - 4(-1) + 6 = 8$

X	Y
-3	0
-2	6
-1	8
0	6
1	0

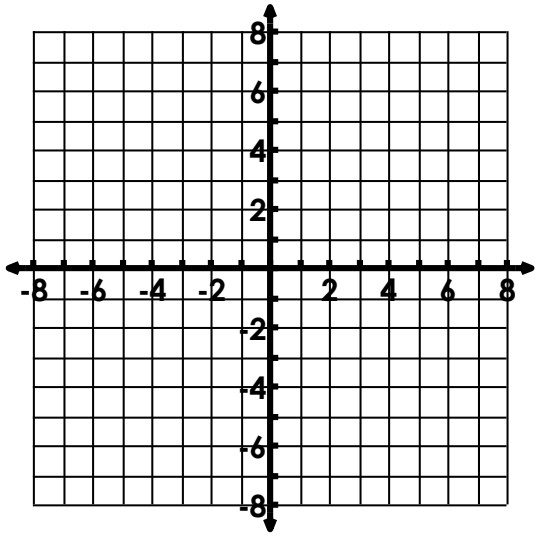


This parabola has an _____ at $x = -1$, a _____ at $(-1,8)$ which is also considered a _____, a _____ at $(0,6)$, and _____ at $(-3,0)$ and $(1,0)$.

Example 1: Graph $y = x^2 - 2x - 3$

a = b = c=
Vertex? (,)

x	y

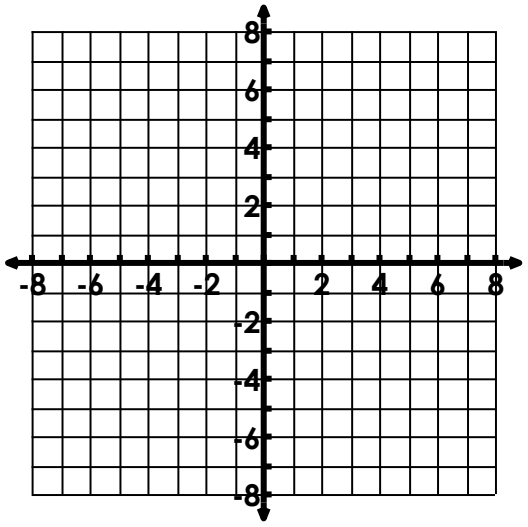


Y-Intercept?
X-Intercepts?
Up or Down?
Maximum or Minimum?

Example 2: Graph: $y = 3x^2 - 6x$.

a = b = c=
Vertex? (,)

x	y

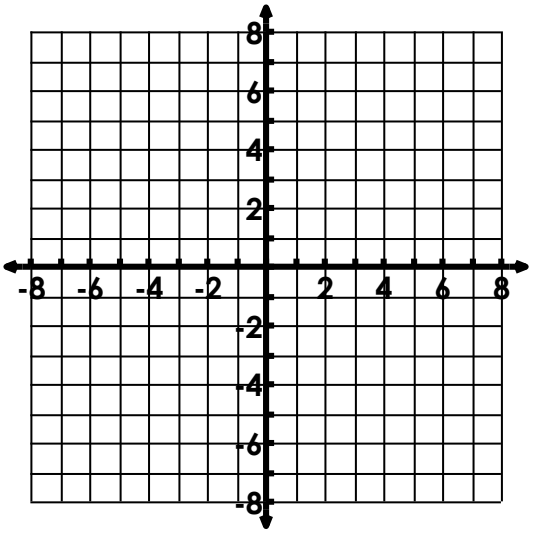


Y-Intercept?
X-Intercepts?
Up or Down?
Maximum or Minimum?

Example 3: Graph $y = 2x^2 + 3$.

a = b = c=
Vertex? (,)

x	y

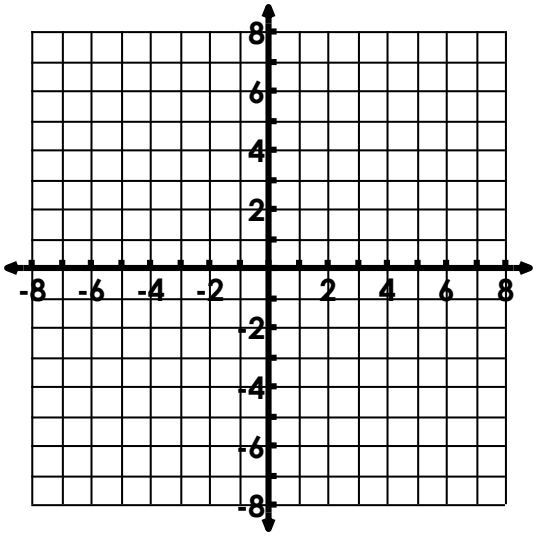


Y-Intercept?
X-Intercepts?
Up or Down?
Maximum or Minimum?

Example 4: Graph: $y = -x^2 + 6x - 9$

a = b = c=
Vertex? (,)

x	y



Y-Intercept?
X-Intercepts?
Up or Down?
Maximum or Minimum?