

Day 6: Graphing in Standard Form

Date _____

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Standard Form of a Quadratic

$$y = Ax^2 + Bx + C$$

1) Graphing a Quadratic Function is in Standard Form:

Step 1: Find the Axis of Symmetry

To find the axis of symmetry, we use the equation $x = -\frac{B}{2A}$

Step 2: Find the Vertex

Since our vertex lies on the axis of symmetry, we know that the x -value of the vertex is on the axis of symmetry.

To find the y -value of the axis of symmetry, we plug the x -value into the equation.

Step 3: Determine if it is a Maximum or Minimum point.

Step 4: Find the y -intercept

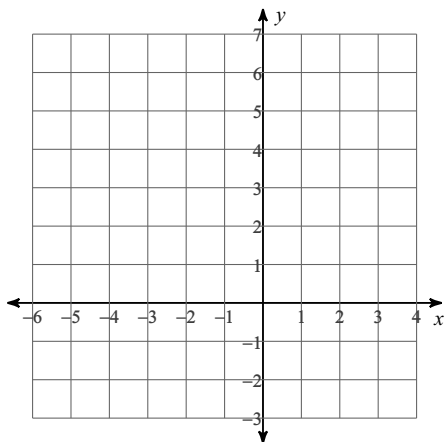
Plug in $x = 0$ to your equation and solve for y .

*Hint: what do you notice about your equation and the y -intercept

Step 5: Find the x -intercept(s)

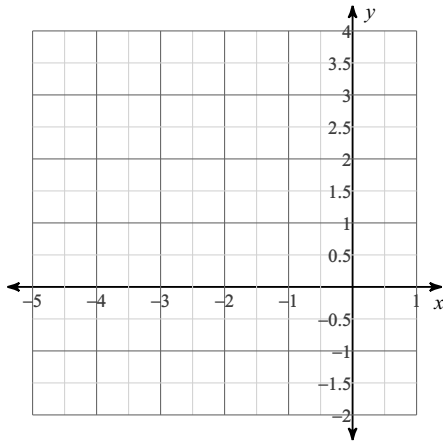
Graph the equation from Standard Form. List all key features of the function.

2) $y = 2x^2 + 4x$

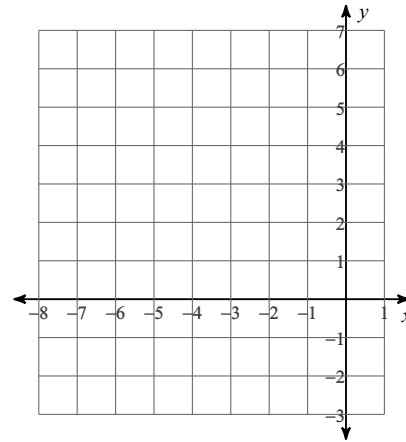


Graph the equation from Standard Form. List all key features of the function and show at least 5 points on your graph.

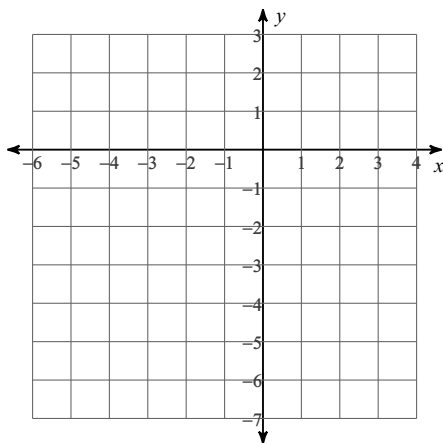
3) $y = x^2 + 2x$



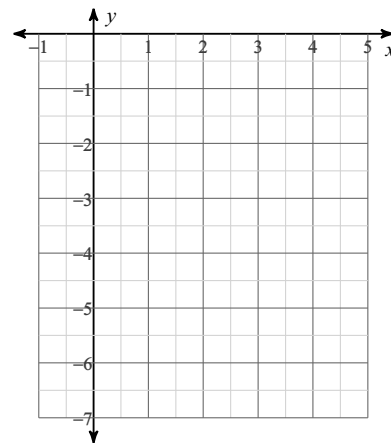
4) $y = 2x^2 + 16x + 30$



5) $y = -2x^2 - 4x$



6) $y = -x^2 + 6x - 11$



Finding x -intercept(s) from Standard Form...

7) Usually they will show up on your graph as we are graphing our 5 points.

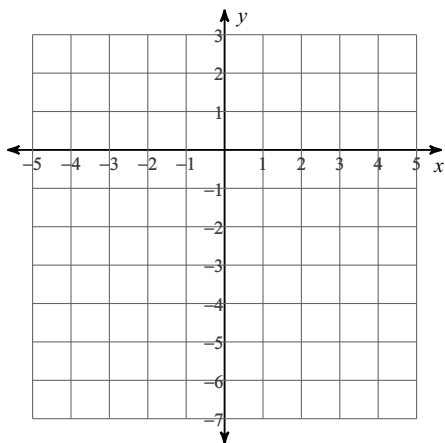
If they don't...

then that means that our x -intercept(s) are either imaginary (so they aren't on our graph).
or we need to use the Quadratic Formula to find the x -intercept(s).

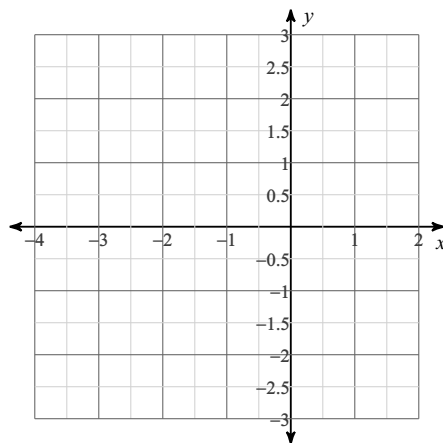
Quadratic Formula:

Graph each quadratic equation. List all key features.

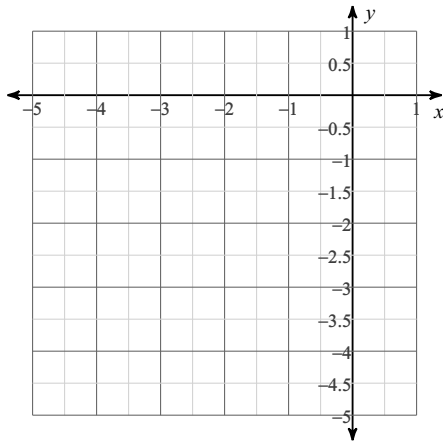
8) $f(x) = -2x^2 - 8x - 6$



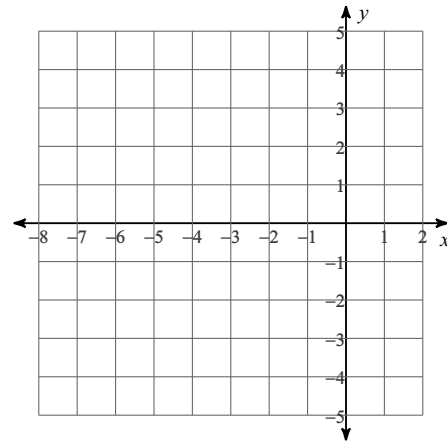
9) $f(x) = -x^2 - 4x - 2$



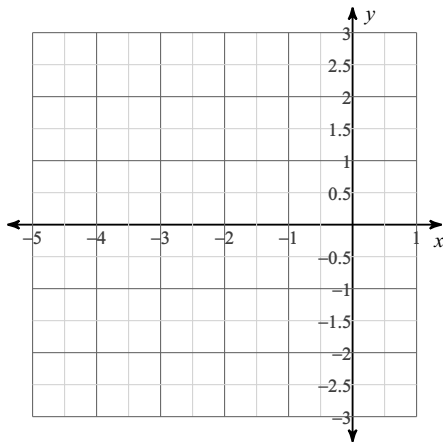
10) $f(x) = x^2 + 4x$



11) $f(x) = -2x^2 - 12x - 14$



12) $y = -x^2 - 2x + 1$



13) $y = -2x^2 + 12x - 19$

