



Math Virtual Learning

Algebra 1 S2

April 17th, 2020



Lesson: April 17th, 2020

Objective:

Students will solve a quadratic function by graphing (using Desmos).

Let's Warm-Up!

Part 1:

Identify the Key Features of the graphed function:

Open Up or Down?

Vertex: (,)

Max or Min?

Axis of Symmetry: $x =$ _____

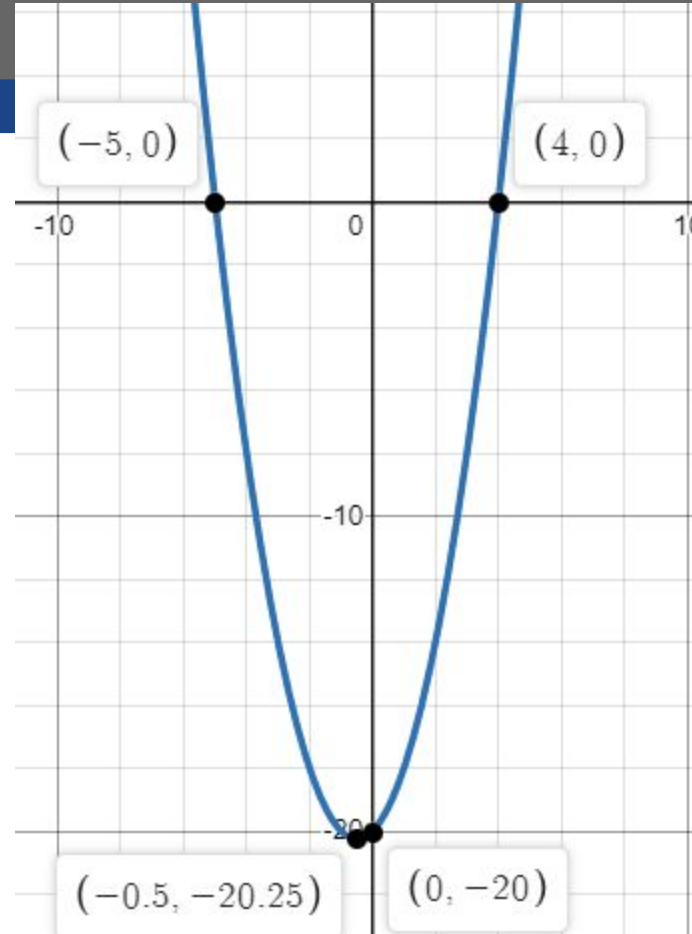
Domain: _____ $\leq x \leq$ _____

Range: _____ $\leq y \leq$ _____

End Behavior:

- As $x \rightarrow -\infty$, $y \rightarrow$ _____
- As $x \rightarrow \infty$, $y \rightarrow$ _____

Zeros/X-intercepts:



Answers are at the beginning of the Video Lesson



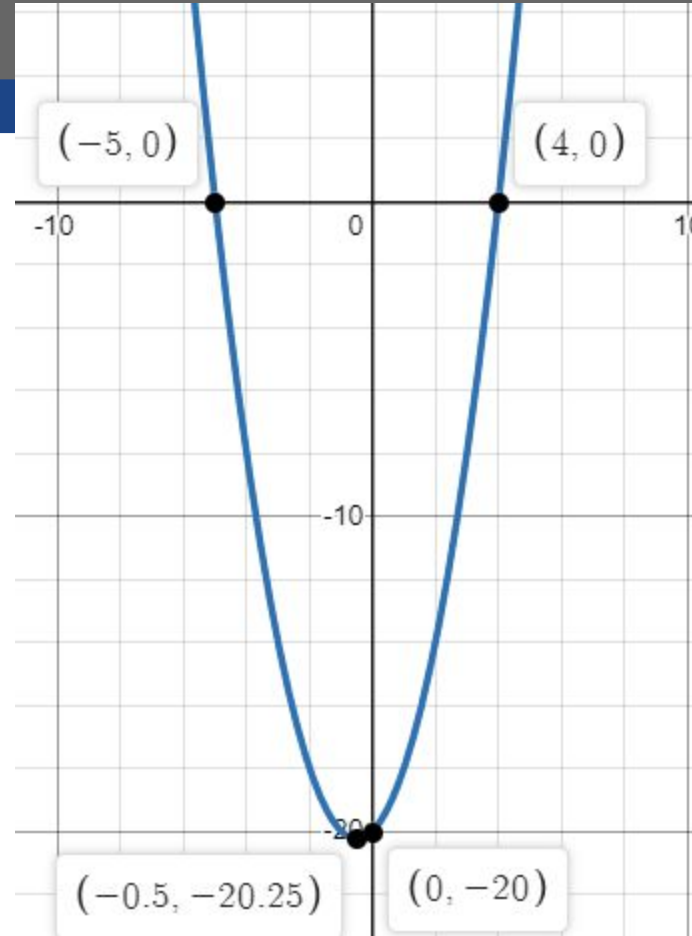
Let's Warm-Up!

Part 2:

We know both of the zeros or x-intercepts, so work backwards and write both factors of the graphed function:

**I've started the factored form for you. So try and fill in the blanks.*

$$(x \underline{\hspace{1cm}})(x \underline{\hspace{1cm}}) = 0$$



Answers are at the beginning of the Video Lesson

Let's Warm-Up!

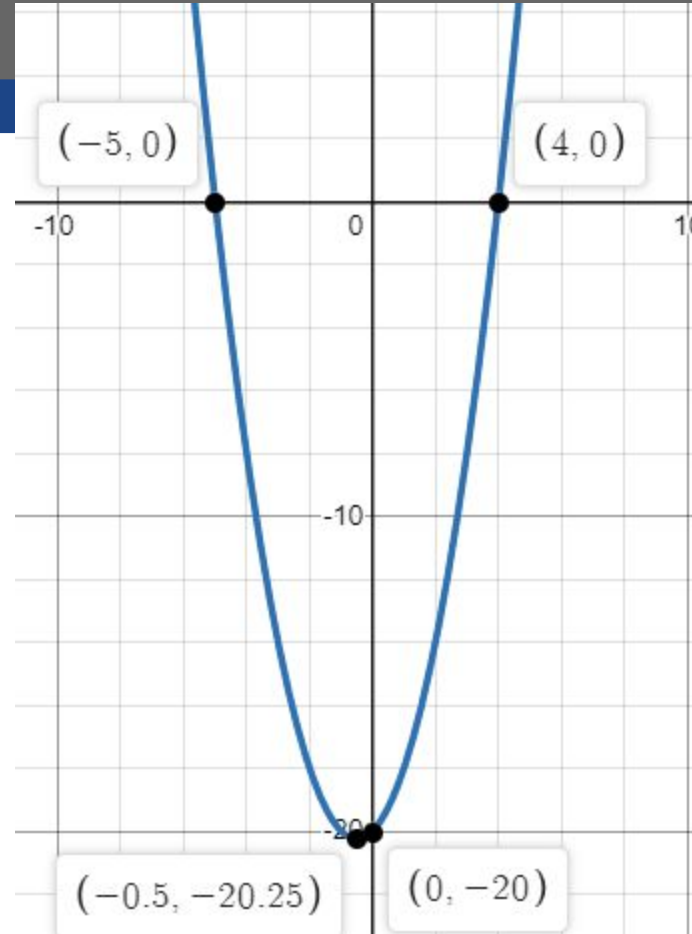
Part 3:

We now have the quadratic in factored form. So now go ahead and multiply the two factors to write the quadratic in standard form:

**I've started the standard form for you. So try and fill in the blanks.*

$$\underline{\quad}x^2 \underline{\quad}x \underline{\quad} = 0$$

Answers are at the beginning of the Video Lesson



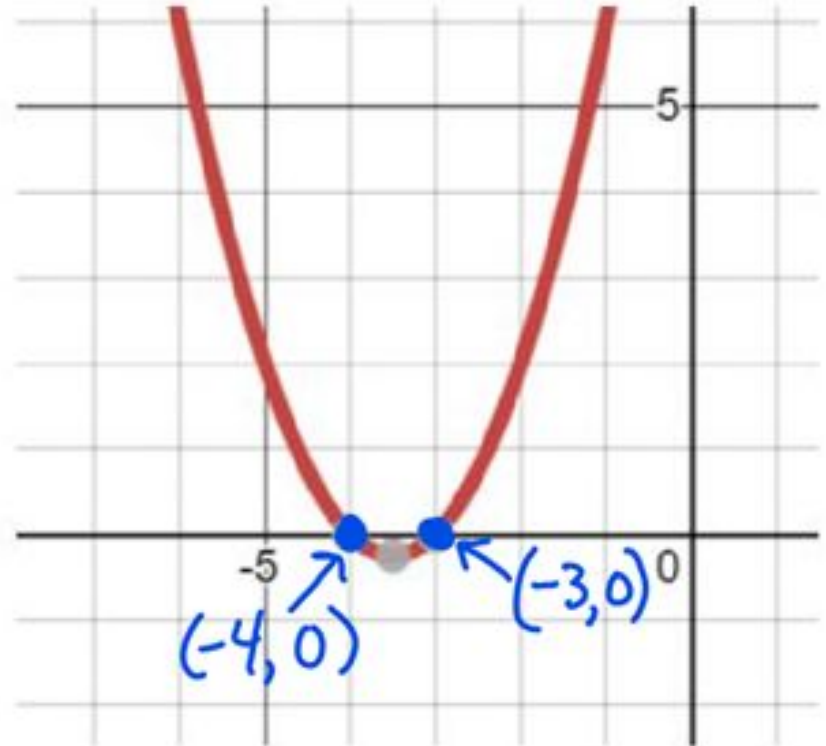
Video Lesson

Please watch today's [Video Lesson](#) to learn how to use Desmos to graph and solve a quadratic function.

Go to [desmos.com](https://www.desmos.com) and graph the quadratic. Solve the quadratic by finding the x-intercepts (AKA zeros, solutions, roots).

$$y = x^2 + 7x + 12 \text{ (this is the example from the video)}$$

Answer: $x = -3$
 $x = -4$



Practice

Go to [desmos.com](https://www.desmos.com) and graph each quadratic. Solve the quadratic by finding the x-intercepts (AKA zeros, solutions, roots).

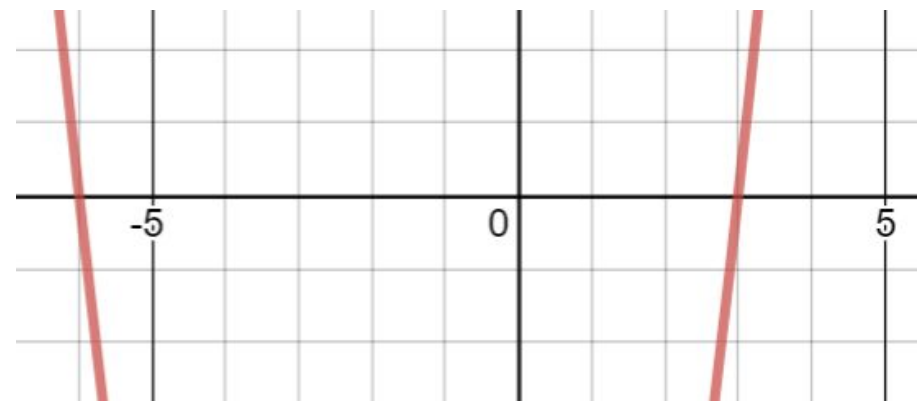
$$y = x^2 + 3x - 18$$

$$y = x^2 - 10x + 24$$

Practice Answers

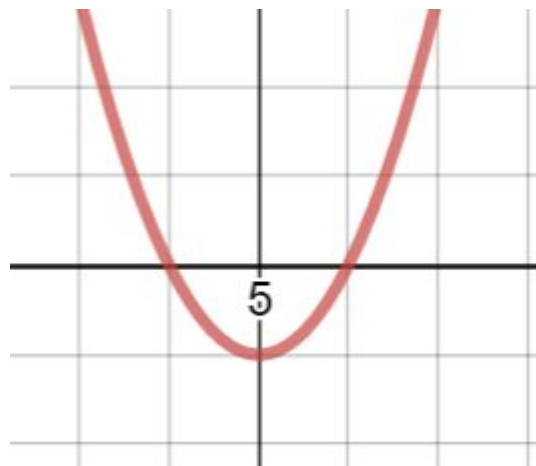
Go to [desmos.com](https://www.desmos.com) and graph each quadratic. Solve the quadratic by finding the x-intercepts (AKA zeros, solutions, roots).

$$y = x^2 + 3x - 18$$



$$x = -6 \text{ and } 3$$

$$y = x^2 - 10x + 24$$



$$x = 4 \text{ and } 6$$

Continued Practice

$$y = 6x^2 - 18x - 24$$

$$y = (x + 1)(x - 5)$$

$$y = (x + 1)(x + 2)$$

$$y = (x - 3)^2$$

Continued Practice Answers

$$y = 6x^2 - 18x - 24$$

$$x = -1 \text{ and } 4$$

$$y = (x + 1)(x - 5)$$

$$x = -1 \text{ and } 5$$

$$y = (x + 1)(x + 2)$$

$$x = -1 \text{ and } -2$$

$$y = (x - 3)^2 \quad \text{Same as } (x - 3)(x - 3)$$

$$x = 3 \text{ only one solution!}$$

Continued Practice - You got this!

$$y = (x + 5)^2$$

$$y = 5x^2 + 4$$

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

Continued Practice - You got this! Answers

$$y = (x + 5)^2$$

$x = -5$ only one solution!

$$y = 5x^2 + 4$$

No solution! Graph does not cross the x-axis.

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

No solution! Graph does not cross the x-axis.



Additional Practice:

Click on the links below to get additional practice and to check your understanding!

[Extra Practice](#)

[Key](#)