



**Math Virtual Learning**

# **Algebra 1 S2**

**May 6th, 2020**



Algebra 1 S2  
Lesson: May 6th, 2020

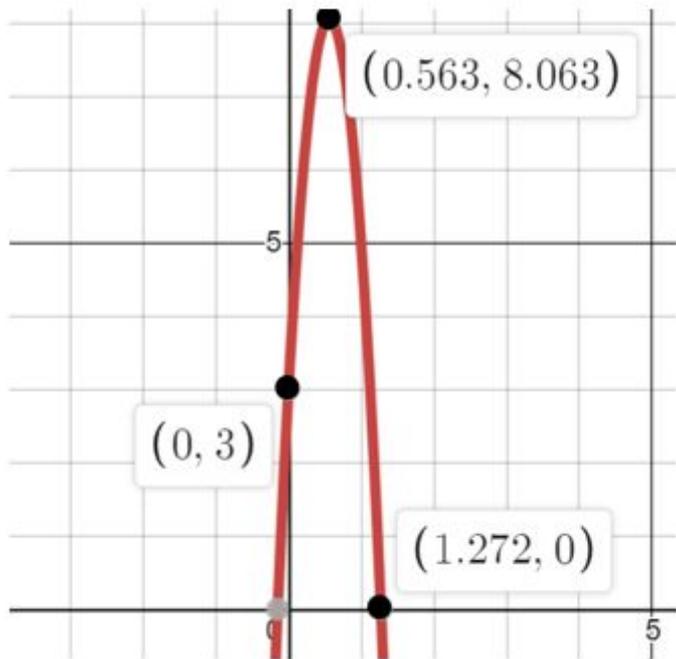
**Learning Target:**  
Students will be reviewing the concepts from the  
quadratics unit.

# Warm-Up #1

The height of a ball, in feet, can be represented by the following equation where  $t$  is time in seconds:

$$y = -16t^2 + 18t + 3$$

- Define the variables  $x$  and  $y$ .
- What is the initial height of the ball?
- When does the ball hit the ground?
- What is the maximum height of the ball?
- When does the ball reach its maximum height?



# Warm-Up #1 Answer

The height of a ball, in feet, can be represented by the following equation where  $t$  is time in seconds:

$$y = -16t^2 + 18t + 3$$

a) Define the variables  $x$  and  $y$ .

$x$  is  $t$ , the time in seconds the ball is in the air,  $y$  is the height of the ball in feet

b) What is the initial height of the ball?

3 ft (this is the  $y$ -intercept in the graph and the " $c$ " in the equation)

c) When does the ball hit the ground?

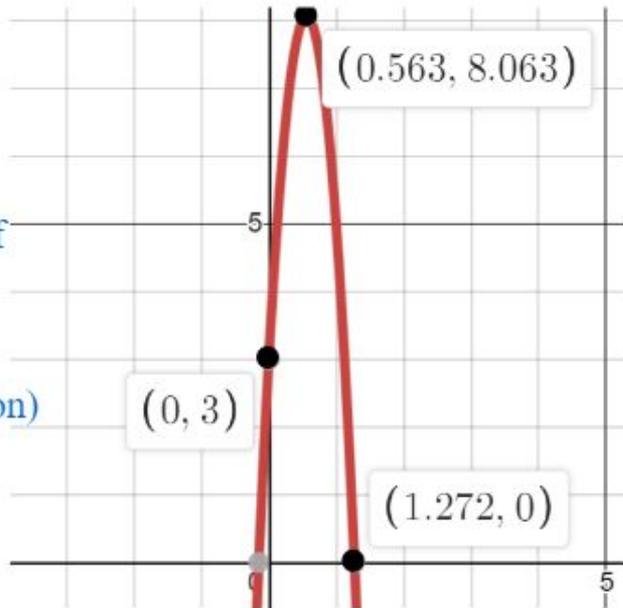
After 1.272 seconds (this is the  $x$ -intercept)

d) What is the maximum height of the ball?

8.063 feet (this is the  $y$ -value of the maximum point)

e) When does the ball reach its maximum height?

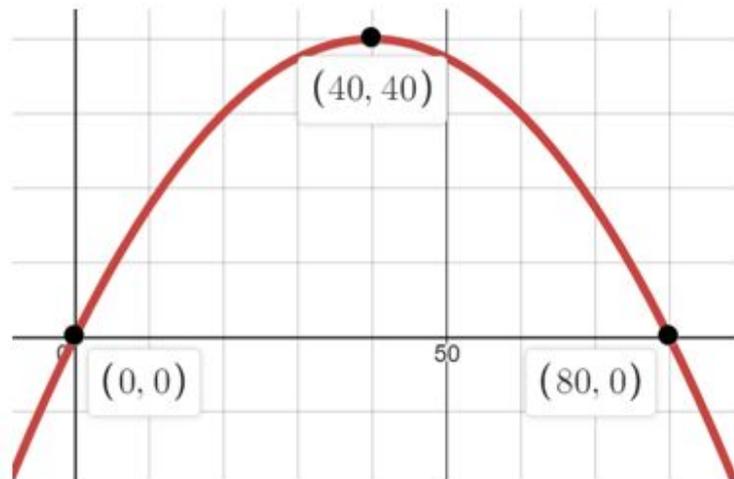
At 0.563 seconds (this is the  $x$ -value of the maximum)



## Warm-Up #2

The shape of an arch can be modeled by the function  $h(x) = -0.025x^2 + 2x$ , where  $h(x)$  represents the height of the arch in feet and  $x$  represents the distance from one end of the arch to the other.

- Define the variables  $x$  and  $y$ .
- What is the width of the arch?
- What is the maximum height of the arch?
- What is the reasonable domain and range?



## Warm-Up #2 Answer

The shape of an arch can be modeled by the function  $h(x) = -0.025x^2 + 2x$ , where  $h(x)$  represents the height of the arch in feet and  $x$  represents the distance from one end of the arch to the other.

a) Define the variables  $x$  and  $y$ .

$x$  is the distance from one end of the arch to the other,  $y$  is  $h(x)$ , the height of the arch in feet

b) What is the width of the arch?

80 ft (this is the distance between the  $x$ -intercepts)

c) What is the maximum height of the arch?

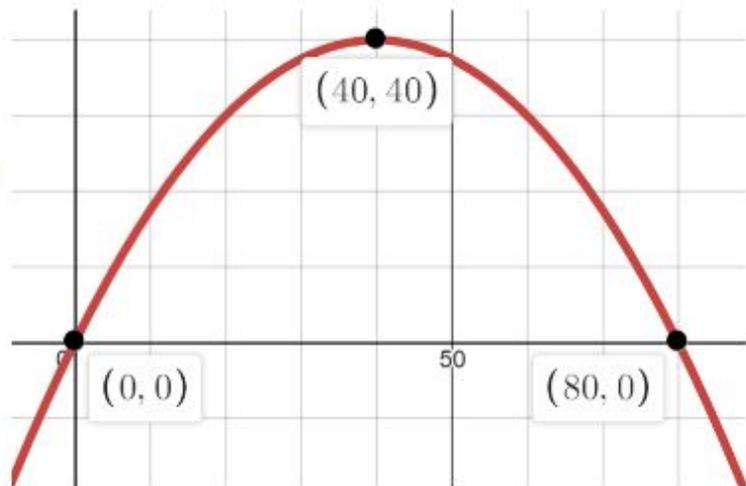
40 ft (this is the  $y$  value of the maximum point)

d) What is the reasonable domain and range?

Domain: between 0 and 80 feet

Range: between 0 and 40 feet

\*it is not reasonable for distance & height to be negative





## Today's Lesson

In today's lesson we will be reviewing all of the concepts in the quadratic unit. Go to the next slide to find the Independent Practice with key.



## Independent Practice

Complete the [Quadratic Unit Review](#) and then check your work with the [Key](#).



## Additional Practice:

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

Click [here](#) for a practice test on quadratics.

\*[Key](#)