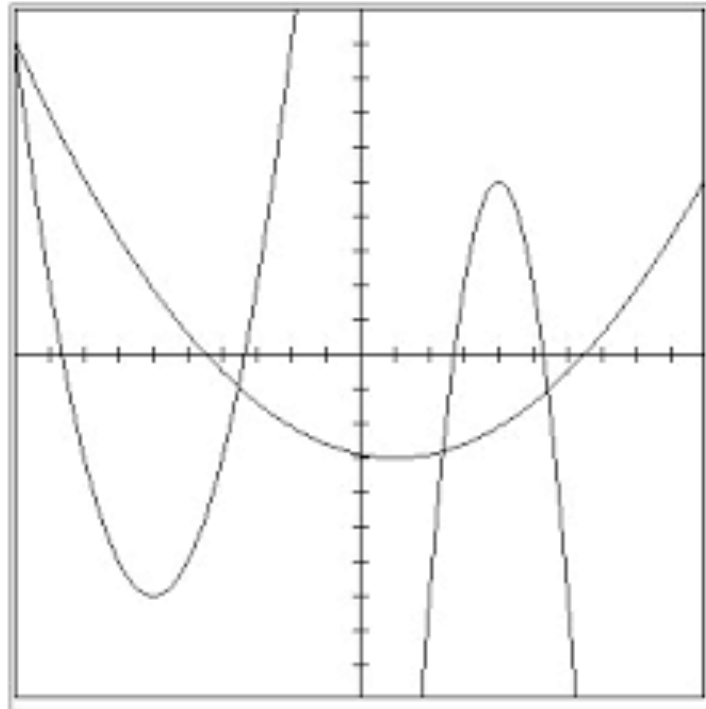


# Lesson 3.3.2 and 3.3.3: Building Quadratics Based on Information



By the end of this lesson, I will be able to answer the following questions...

1. Given information of a parabola, how do I use the information to build functions of parabolas.



# Vocabulary

## 1. Standard Form

$$f(x) = Ax^2 + Bx + C$$

## 2. Vertex Form

$$f(x) = a(x - h)^2 + k$$

## 3. Factored Form

$$f(x) = a(x - p)(x - q)$$

# Prerequisite Skills with Practice

Given  $f(x) = Ax^2 + Bx + C$

Solve for "C" if ...

$$x = 1$$

$$A = 2$$

$$B = 4$$

$$f(x) = 10$$

Given  $f(x) = a(x-h)^2 + k$

Solve for "a" if ...

$$x = 1$$

$$h = 4$$

$$k = 2$$

$$f(x) = 8$$

Given  $f(x) = a(x-p)(x-q)$

Solve for "a" if ...

$$x = 1$$

$$p = 5$$

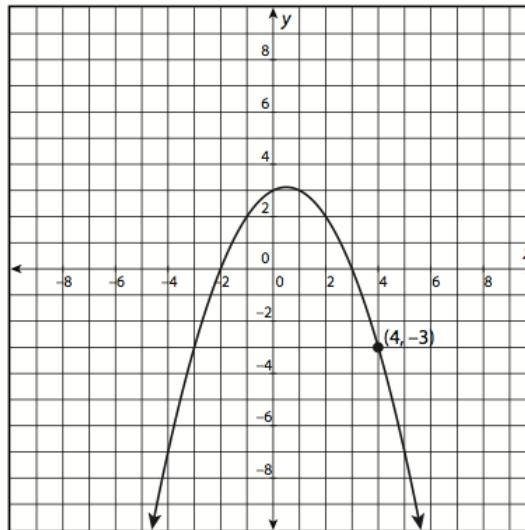
$$q = 2$$

$$f(x) = -3$$

Determine the equation of a quadratic in Factored form, given the  $x$  - intercepts  $x = 2$  and  $x = -2$ , and the point  $(0, 3)$ . After you get your solution, check it on Desmos.

Determine the equation of a quadratic in Factored form, given the  $x$  - intercepts  $x = 3$  and  $x = -4$ , and the point  $(0, -36)$ . After you get your solution, check it on Desmos.

Use the intercepts and a point on the graph below to write the equation of the function in Factored form. After you get your solution, check it on Desmos to make sure it looks like the graph to the right.



Determine the equation of a quadratic function that has a minimum at  $(-4, -8)$  and passes through the point  $(-2, -5)$ .

# THE END



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