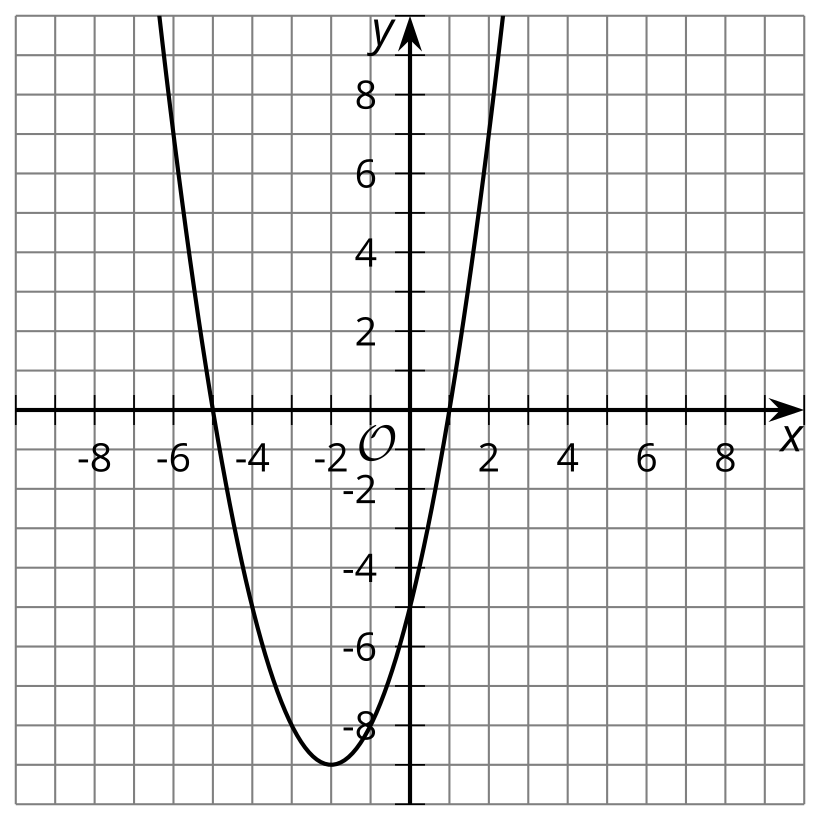
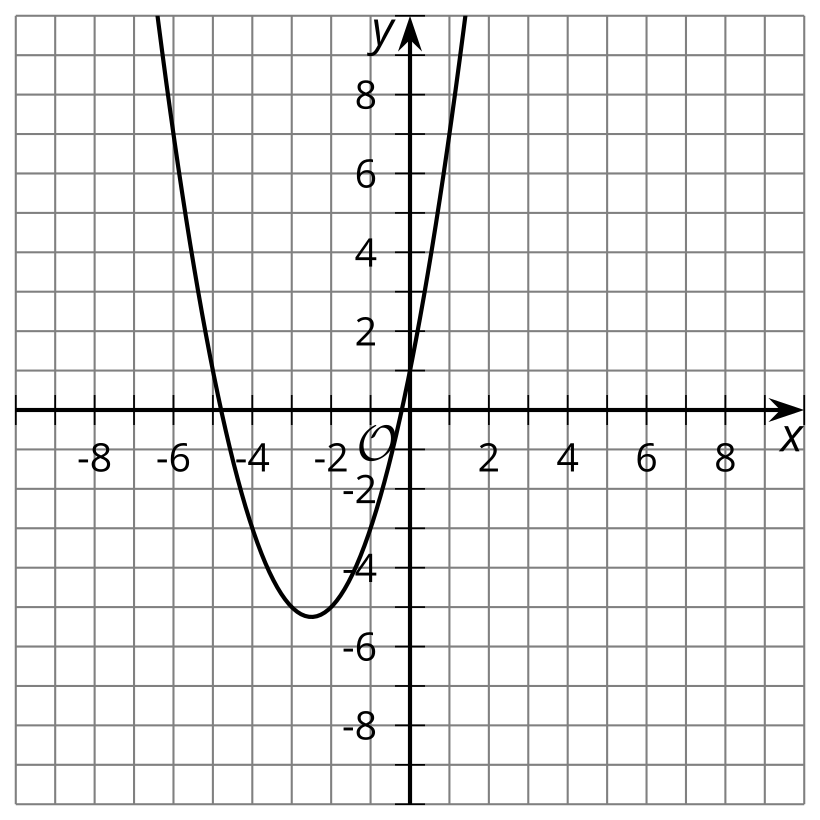
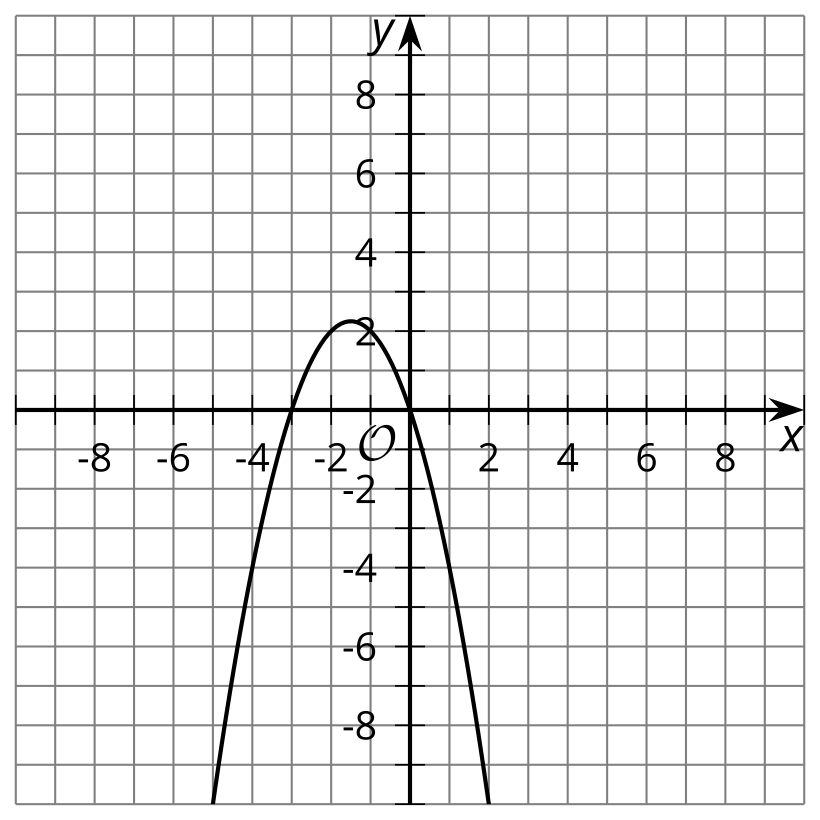
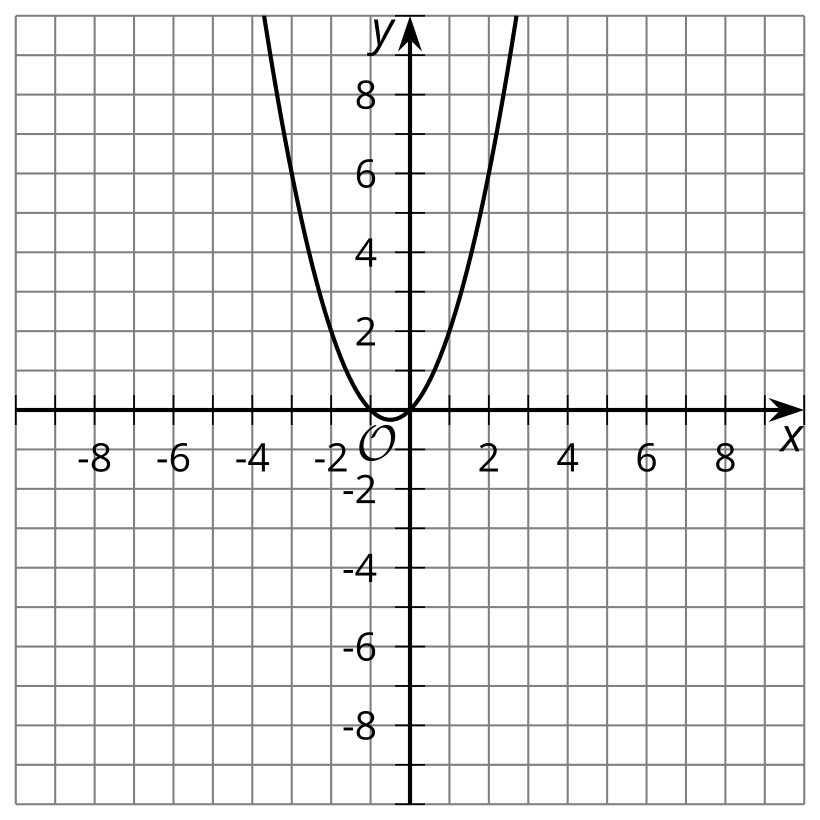
## Unit 7 Lesson 22: Features of Parabolas

### 1 Matching Quadratic Graphs (Warm up)

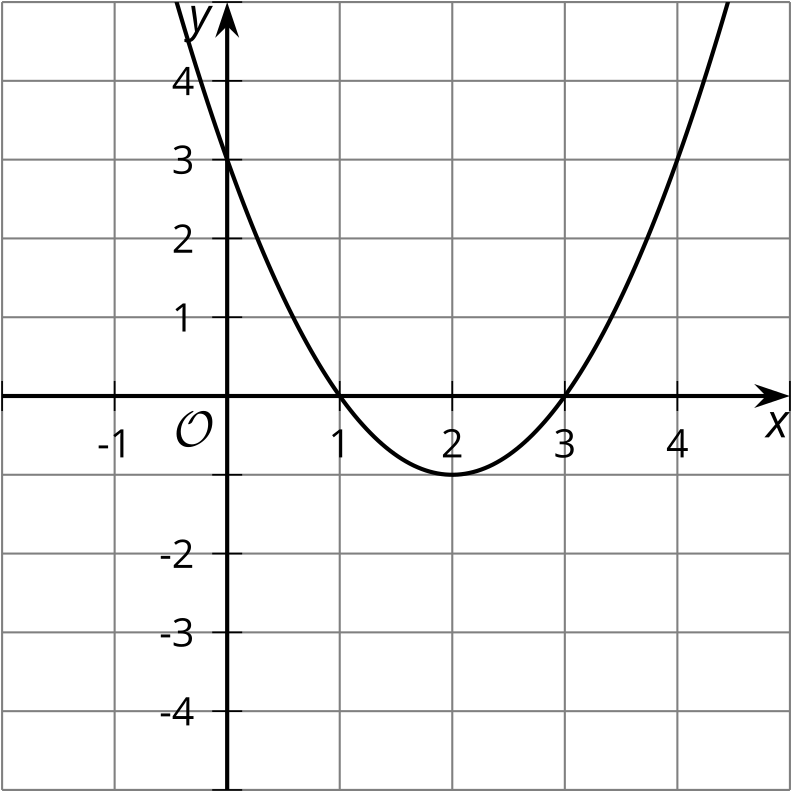
#### Student Task Statement

Match the equation to the graph. Be prepared to explain your reasoning.

* A
* 
* B
* 
* C
* 
* D
* 

### 2 Features of a Quadratic Graph

#### Images for Launch

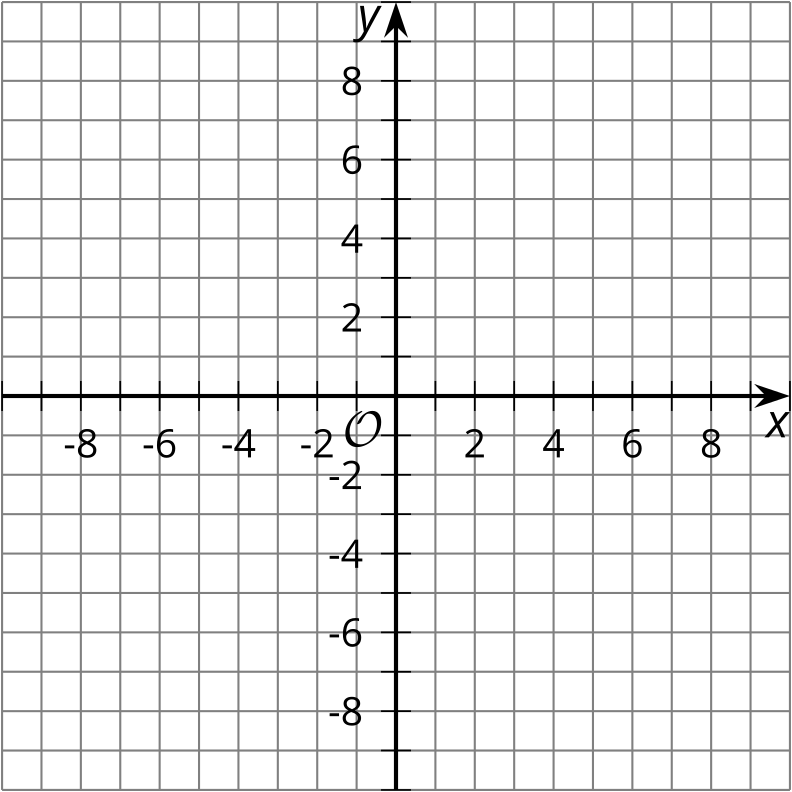
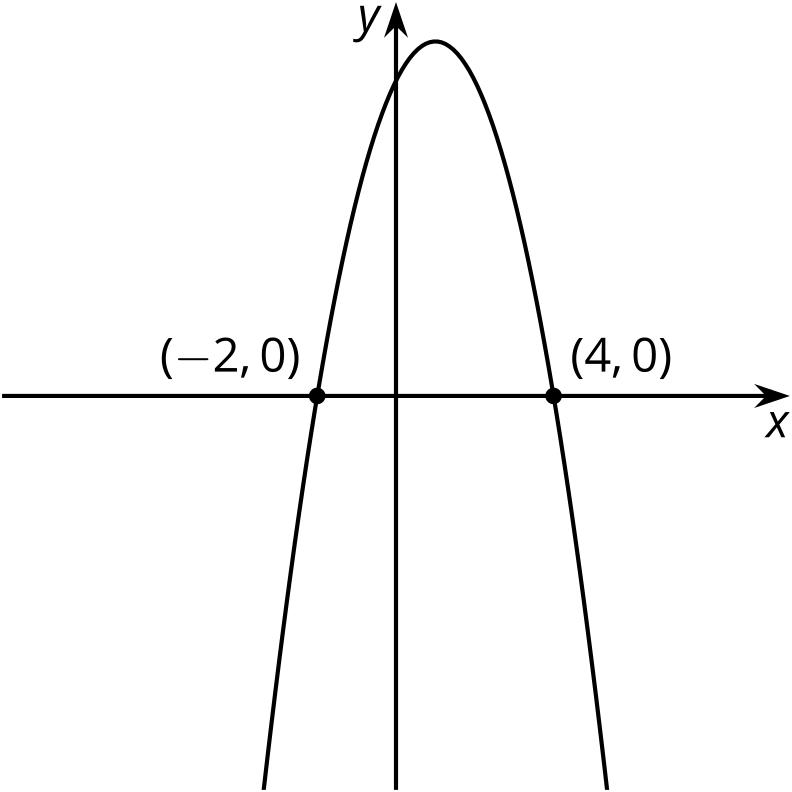


#### Student Task Statement

1. Graph the function .
2. Find the coordinates for the
   1. -intercepts
   2. -intercept
   3. vertex
3. Draw a dashed line along the line of symmetry for the graph.
4. What do you notice about the line of symmetry as it relates to the:
   1. vertex
   2. -intercepts
5. Use the line of symmetry and the -intercept to find another point on the parabola.

### 3 What Do You Know?

#### Student Task Statement

1. Write a function that is represented by a graph with -intercepts at and .
   1. Without graphing the function, find the -intercept. Explain or show your reasoning.
   2. Without using graphing technology, use the three points you know to sketch the graph of this function.
   * 
   1. What is the -coordinate of the vertex? Explain your reasoning.
   2. Using the -coordinate you found for the vertex, find the coordinate pair for the vertex.
2. 
   1. What do you know about the coordinates of the -intercept?
   2. What do you know about the coordinates of the vertex?



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