

# 21.0

3 CST items

Students graph quadratic functions and know that their roots are the  $x$ -intercepts.

## Key Vocabulary

Quadratic

Zeroes

Roots

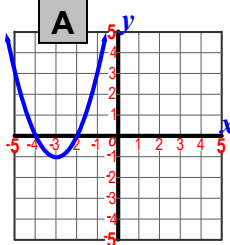
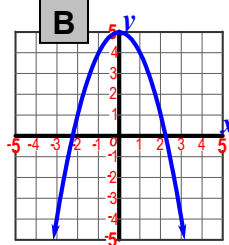
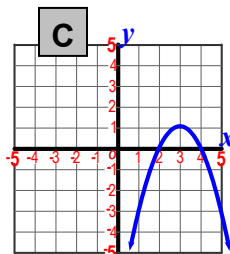
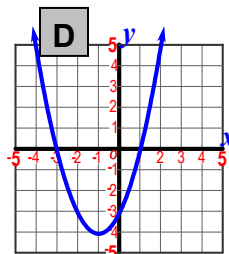
$x$ -intercept

## Instructional Objectives

1	Graph quadratic equations using $x$ - $y$ data tables.	1	Graph using an $x$ - $y$ table: $y = x^2$ .
		2	Graph using an $x$ - $y$ table: $y = -x^2 + 9$ .
		3	Graph using an $x$ - $y$ table: $y = x^2 - 6x$ .
		4	Graph using an $x$ - $y$ table: $y = x^2 - 4x - 12$ .

2	Solve quadratic equations by graphing and inspecting the $x$ -intercepts (roots).	1	Solve for $x$ using a graph: $x^2 + 4x = 0$
		2	Solve for $x$ using a graph: $x^2 = 9$
		3	Use a graph to estimate the roots of $y = x^2 + 1.5x - 10$ .
		4	In the equation $y = x^2 + 6x$ , for what values of $x$ is $y = 0$ ?

3 Match the graph of a quadratic to a corresponding equation.

<p>1 Of graphs A, B, C, or D, which best represents the graph of <math>y = -x^2 + 5</math>?</p> <hr/> <p>2 Of graphs A, B, C, or D, which best represents the graph of <math>y = x^2 + 2x - 3</math>?</p> <hr/> <p>3 Of graphs A, B, C, or D, which best represents the graph of <math>y = x^2 + 6x + 8</math>?</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>A</b></p>  </div> <div style="text-align: center;"> <p><b>B</b></p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p><b>C</b></p>  </div> <div style="text-align: center;"> <p><b>D</b></p>  </div> </div>
<p>4 Which equation best corresponds to the graph shown on the right?</p> <p>a) <math>y = x^2 + 6x</math>      b) <math>y = x^2 - 6x</math></p> <p>c) <math>y = -x^2 + 6x</math>      d) <math>y = -x^2 - 6x</math></p>	