

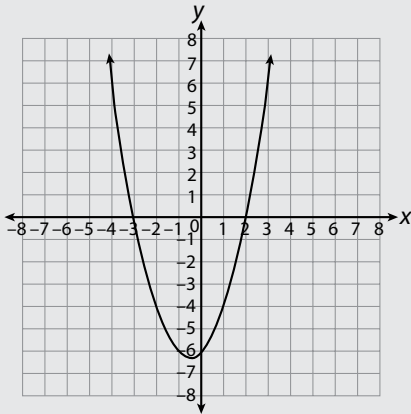
25

Graph Quadratic Equations

A.14

Example

The function $f(x) = x^2 + x - 6$ is graphed below.



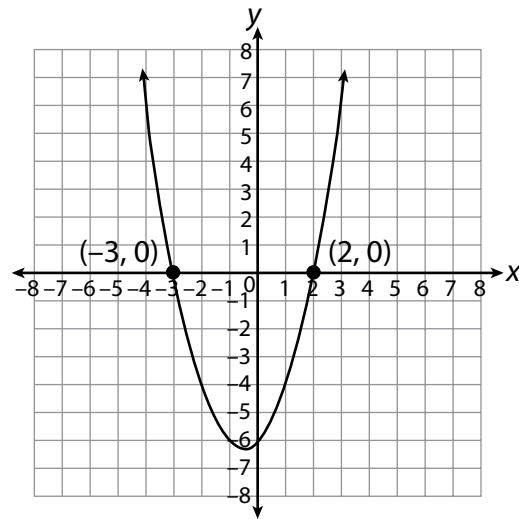
What are the solutions to the equation $x^2 + x - 6 = 0$?

- A -6
- B -3 and 2
- C -2 and 3
- D -1 and 6

Thinking It Through

Look Examine the graph.

$x^2 + x - 6$ equals 0 on the graph where $y = 0$.



So the solutions are -3 and 2, *Choice B*.

Review

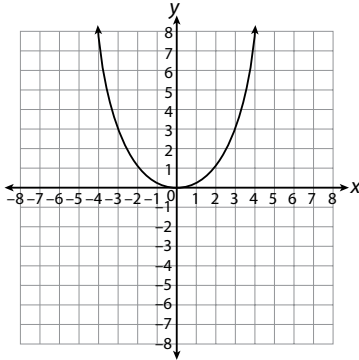
- To solve a quadratic equation by graphing, set the equation equal to zero. Then graph the equation and locate the x -intercepts (where the graph crosses the x -axis). These are the solutions.
- You can graph any quadratic equation on a graphing calculator. Then find the zeros by pressing **2nd** **Trace** **2** and following the instructions on the screen to find the zeros.
- Remember, quadratic equations have 0, 1, or 2 solutions. You can see how many solutions an equation may have from its graph.
- When talking about solving quadratic equations, the **zeros** and the **solutions** are the same.

Graph Quadratic Equations

25

DIRECTIONS Read and solve each question. Then circle the letter of the best answer.

1 How many solutions does the equation graphed below have?

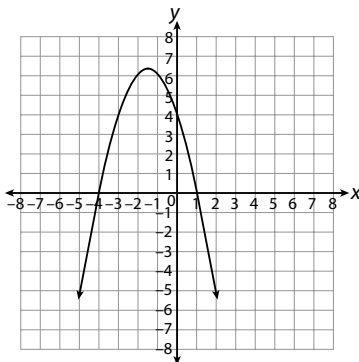


- A 0
- B 1
- C 2
- D 3



In how many places does the graph meet or cross the x -axis?

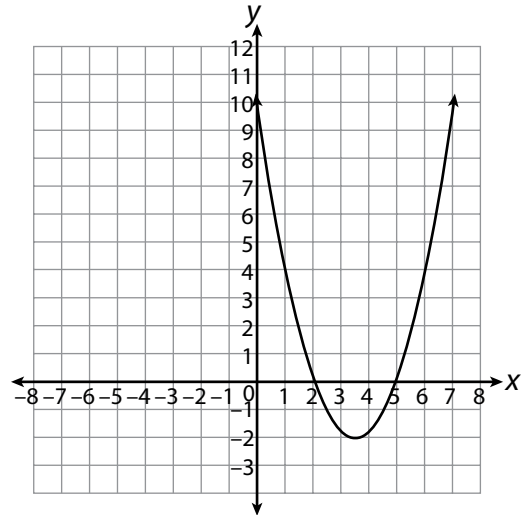
2



What are the solutions of the equation graphed above?

- F -4 and 1
- G -4 and 4
- H 4
- J There are no solutions.

3 Which is the solution set for the equation graphed below?



- A $\{-3, 3\frac{1}{2}\}$
- B $\{2, -5\}$
- C $\{2, 5\}$
- D $\{2, 10\}$

4 What are the solutions for

$$x^2 - 6x - 7 = 0?$$

- F $x = -7$ and $x = 1$
- G $x = -6$ and $x = 1$
- H $x = -1$ and $x = 6$
- J $x = -1$ and $x = 7$



Try graphing this equation on your graphing calculator to find the answer.