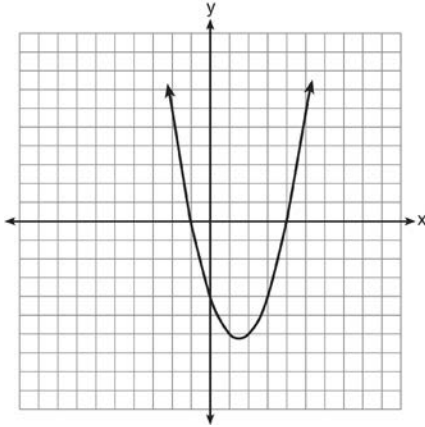


A.G.8: Solving Quadratics by Graphing: Find the roots of a parabolic function graphically

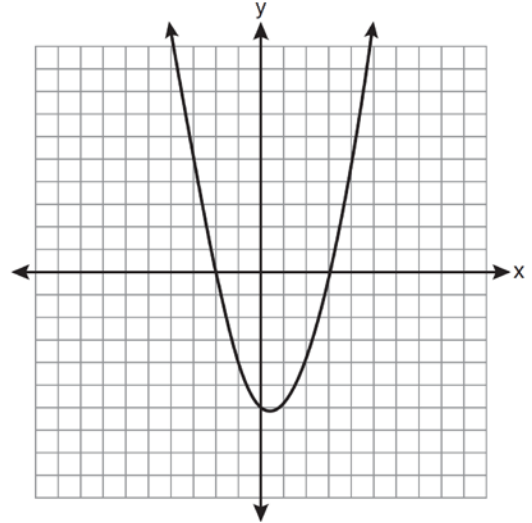
- 1 The roots of a quadratic equation can be found using the graph below.



What are the roots of this equation?

- 1) -4, only
- 2) -4 and -1
- 3) -1 and 4
- 4) -4, -1, and 4

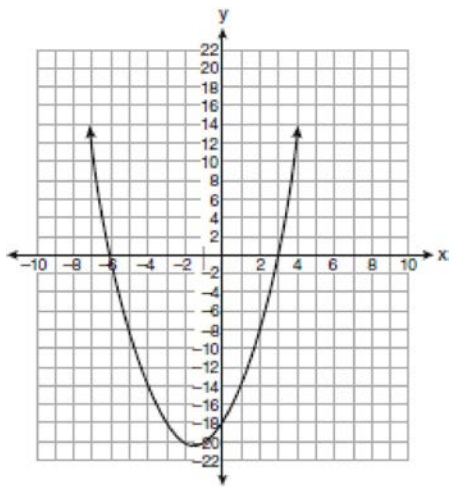
- 2 A student correctly graphed the parabola shown below to solve a given quadratic equation.



What are the roots of the quadratic equation associated with this graph?

- 1) -6 and 3
- 2) -6 and 0
- 3) -3 and 2
- 4) -2 and 3

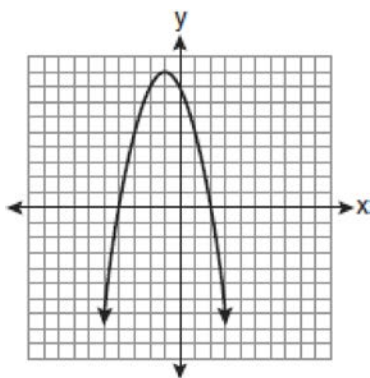
- 3 The equation $y = x^2 + 3x - 18$ is graphed on the set of axes below.



Based on this graph, what are the roots of the equation $x^2 + 3x - 18 = 0$?

- 1) -3 and 6
- 2) 0 and -18
- 3) 3 and -6
- 4) 3 and -18

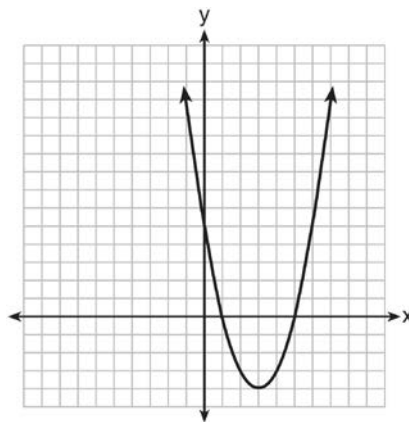
- 4 The equation $y = -x^2 - 2x + 8$ is graphed on the set of axes below.



Based on this graph, what are the roots of the equation $-x^2 - 2x + 8 = 0$?

- 1) 8 and 0
- 2) 2 and -4
- 3) 9 and -1
- 4) 4 and -2

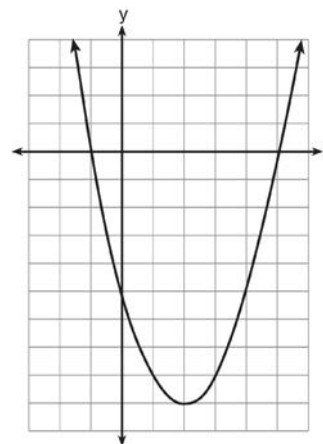
- 5 The equation $y = ax^2 + bx + c$ is graphed on the set of axes below.



Based on the graph, what are the roots of the equation $ax^2 + bx + c = 0$?

- 1) 0 and 5
- 2) 1 and 0
- 3) 1 and 5
- 4) 3 and -4

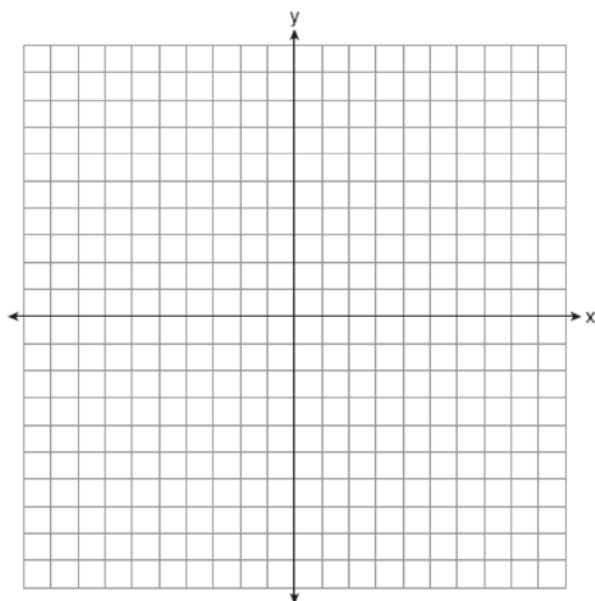
- 6 The graph of $f(x)$ is shown below.



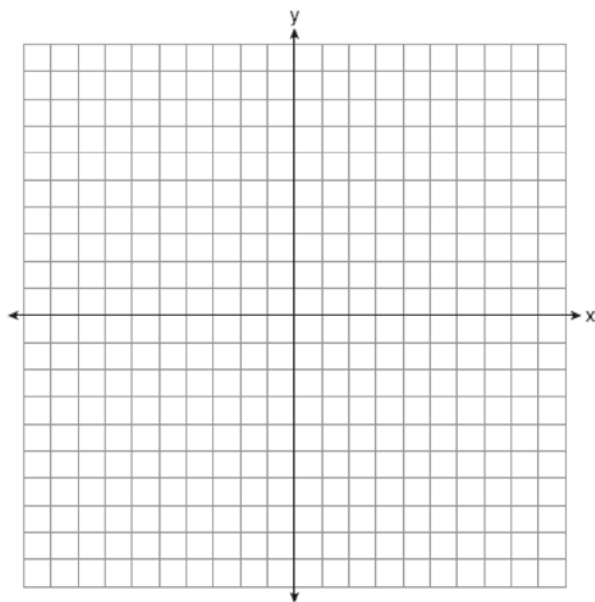
Based on this graph, what are the roots of the equation $f(x) = 0$?

- 1) 1 and -5
- 2) -1 and 5
- 3) 2 and -9
- 4) -1 and -5 and 5

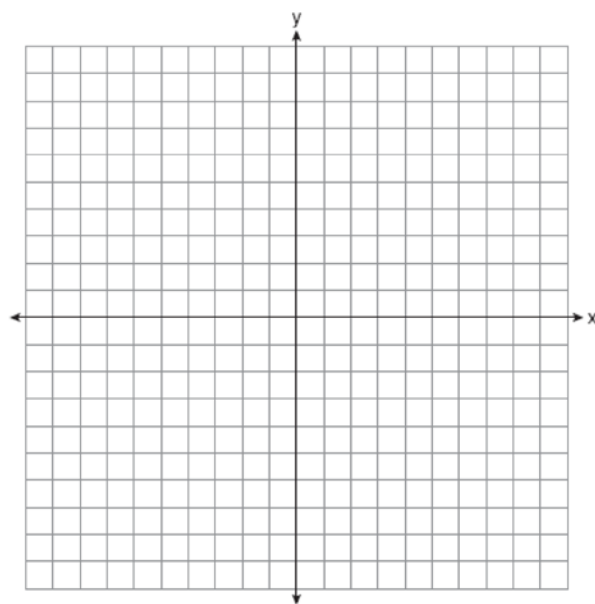
- 7 Graph the equation $y = x^2 - 2x - 3$ on the accompanying set of axes. Using the graph, determine the roots of the equation $x^2 - 2x - 3 = 0$.



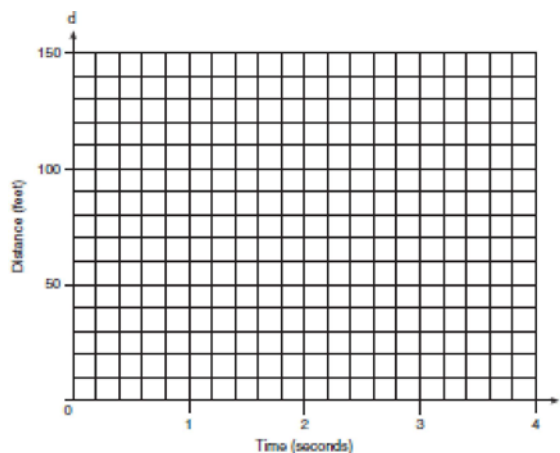
- 8 On the set of axes below, graph the equation $y = x^2 + 2x - 8$. Using the graph, determine and state the roots of the equation $x^2 + 2x - 8 = 0$.



- 9 On the set of axes below, graph $y = 2x^2 - 4x - 6$. State the roots of $0 = 2x^2 - 4x - 6$.



- 10 Greg is in a car at the top of a roller-coaster ride. The distance, d , of the car from the ground as the car descends is determined by the equation $d = 144 - 16t^2$, where t is the number of seconds it takes the car to travel down to each point on the ride. How many seconds will it take Greg to reach the ground?



A.G.8: Solving Quadratics by Graphing: Find the roots of a parabolic function graphically **Answer Section**

1 ANS: 3 REF: 061306ia

2 ANS: 4 REF: 011111ia

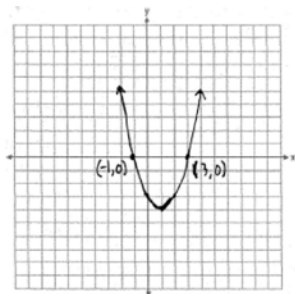
3 ANS: 3 REF: 060924ia

4 ANS: 2 REF: 080916ia

5 ANS: 3 REF: 061404ia

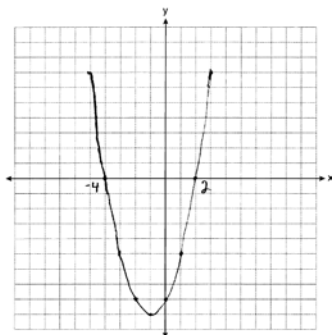
6 ANS: 2 REF: 011506ia

7 ANS:



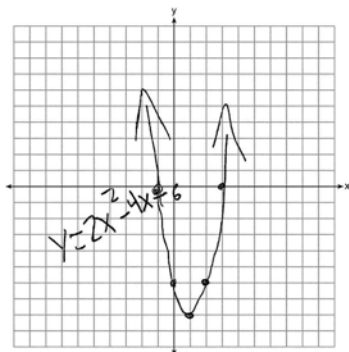
REF: 060836ia

8 ANS:



REF: 061234ia

9 ANS:



3 and -1.

REF: 061537ia

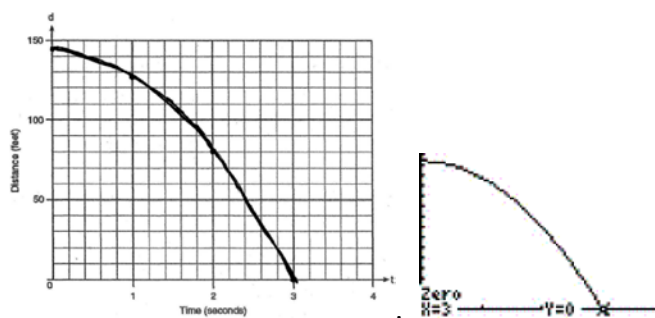
10 ANS:

$$144 - 16t^2 = 0$$

$$(12 + 4t)(12 - 4t) = 0$$

3. $12 + 4t = 0 \quad 12 - 4t = 0$

$$t = -3 \quad t = 3$$



REF: 080234a