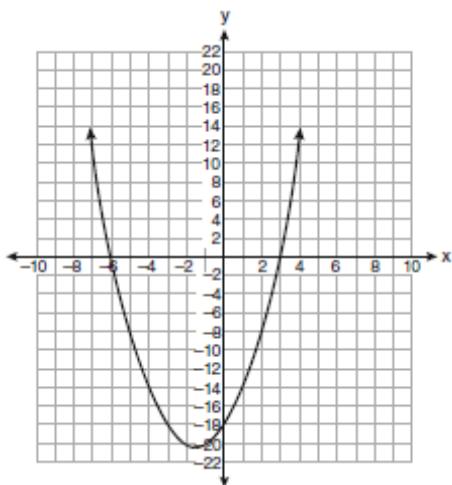


A.G.8: Find the roots of a parabolic function graphically. Note: Only quadratic equations with integral solutions.

1. 060924ia, P.I. A.G.8

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

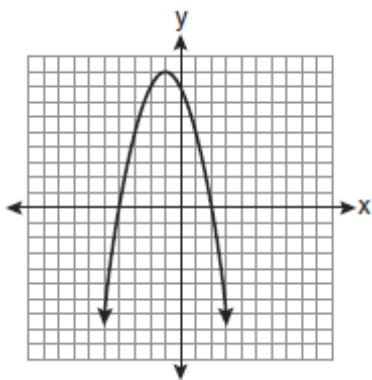


Based on this graph, what are the roots of the equation $x^2 + 3x - 18 = 0$?

- [A] -3 and 6 [B] 3 and -6
[C] 3 and -18 [D] 0 and -18

2. 080916ia, P.I. A.G.8

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

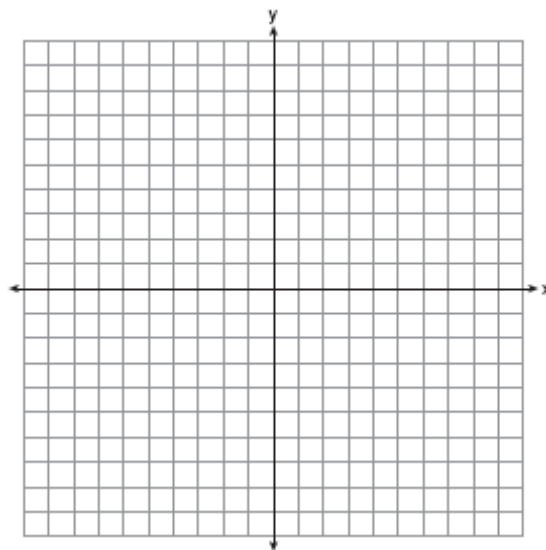


Based on this graph, what are the roots of the equation $-x^2 - 2x + 8 = 0$?

- [A] 2 and -4 [B] 8 and 0
[C] 4 and -2 [D] 9 and -1

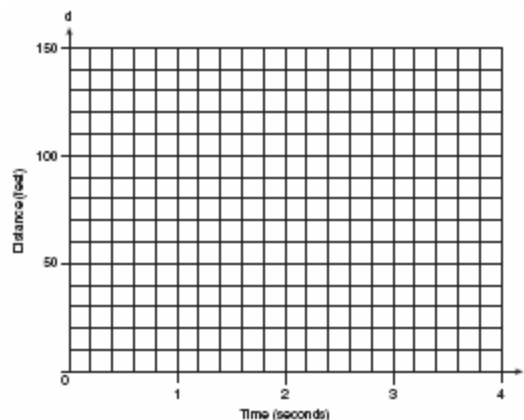
3. 060836ia, P.I. A.G.8

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



4. 080234a, P.I. A.G.8

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? [The use of the grid is optional.]



A.G.8: Find the roots of a parabolic function graphically. Note: Only quadratic equations with integral solutions.

[1] B

[2] A

[3] The correct graph is drawn, and -1 and 3 are found.

[2] Appropriate work is shown, but one graphing error is made, but appropriate roots are identified.

or [2] The graph of the parabola is drawn correctly, but no further correct work is shown.

[1] Appropriate work is shown, but two or more graphing errors are made, but appropriate roots are identified.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1] -1 and 3 are stated, but no work is shown.

[0] -1 or 3 is stated, but no work is shown.

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[3] obviously incorrect procedure.

[4] 3, and an appropriate algebraic or graphic solution is shown.

[3] The equation is graphed correctly, but the time to reach the ground is not identified.

or [3] Appropriate work is shown for an algebraic solution, but either no solution is found or the negative root is not rejected.

or [3] An appropriate algebraic solution is shown, but one computational error is made.

[2] The equation is graphed incorrectly, but an appropriate time to reach the ground is identified.

or [2] The equation is factored incorrectly, but an appropriate solution is found.

[1] 3, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[4] incorrect procedure.