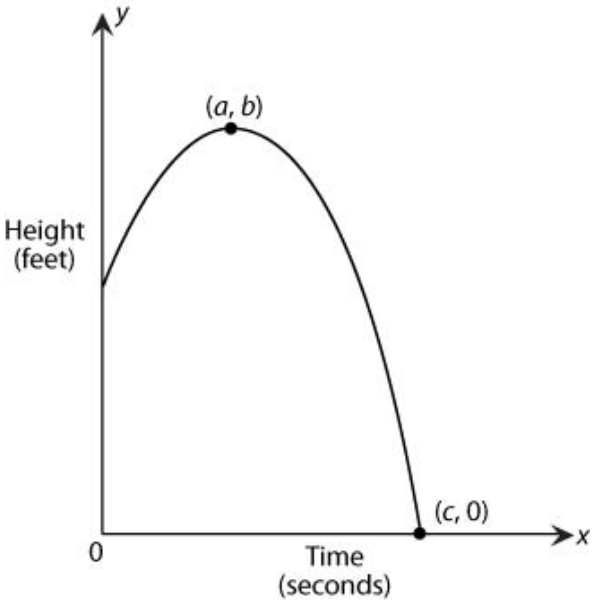
Directions: Answer the following question(s).

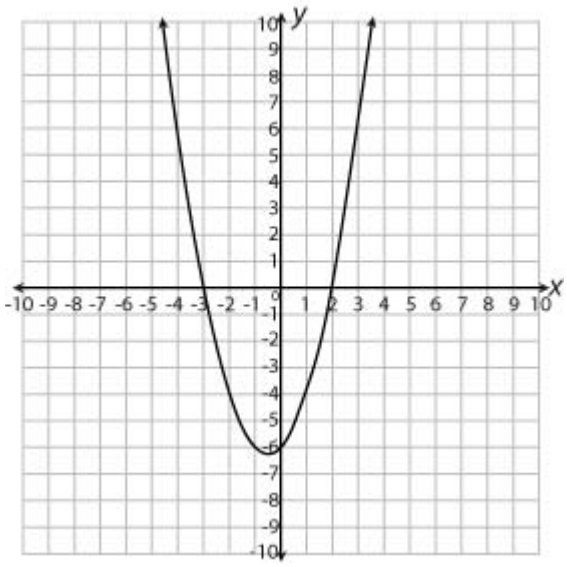
1 Jessica went swimming at a lake. She jumped off a large rock into the water. The graph below uses a quadratic function to show how Jessica's height above the water changed over time.



Explain the meaning of the points (a, b) and (c, 0) in this situation.

Master ID:	2115415 Revision:	4
Rubric:	2 Point(s)	
2	The response is correct and complete. A sample 2-point response is shown below. Sample Correct Answer: The vertex of the graph is at (a, b), which means that a seconds after Jessica jumped, she reached her greatest height of b feet above the water. The x-intercept is at (c, 0), which means that Jessica hit the water c seconds after she jumped.	
1	The response is partially correct.	
0	The response is incorrect or there is no response. This level may contain a correct explanation of one point only.	
Standards:	CCSS.Math.Content.HSF-IF.B.4	

2 The graph below shows a quadratic function of the form $y = ax^2 + bx + c$.



Which statements about this graph are true? Choose ALL that are correct.

A. The "a" coefficient of the equation represented in this graph is negative.

B. This graph has a vertex of $\left(-\frac{1}{2}, 6\frac{1}{4}\right)$.

C. The function represented in this graph has a zero of 2.

D. This graph has two x-intercepts.

E. This graph has no y-intercepts.

Directions: Answer the following question(s).

Master ID: 548377 Revision: 1
Correct: CD
Rationale:

A. This results form not realizing that if the a term were negative, the parabola would open downward instead of upward.
B. This results from failing to realize that the y-coordinate of the graph's vertex is negative.
C. The zeroes of a quadratic functions are its roots, the x-values when it intersects the x-axis. This graph intersects the x-axis at $x = 2$ and $x = –3$.
D. The graph crosses the x-axis at two points, $x = –3$ and $x = 2$, so it has two x-intercepts.
E. This results from not realizing that this graph intersects the y-axis at $y = –6$, so it has one y-intercept.

Standards:
CCSS.Math.Content.HSF-IF.C.7