

## Algebra/Data Analysis Toolkit: Indicator 1.2.4

Student Handout: Algebra/Data Analysis: Indicator 1.2.4

### Goal 1.0 Functions and Algebra

Expectation 1.2 The student will model and interpret real-world situations using the language of mathematics and appropriate technology.

Indicator 1.2.4 The student will describe how the graphical model of a non-linear function represents a given problem and will estimate the solution.

Assessment Limits:

The problem is to be in a real-world context.

The function will be represented by a graph.

The equation of the function may be given.

The features of the graph may include maxima/minima, zeros (roots), rate of change over a given interval (increasing/decreasing), continuity, or domain and range.

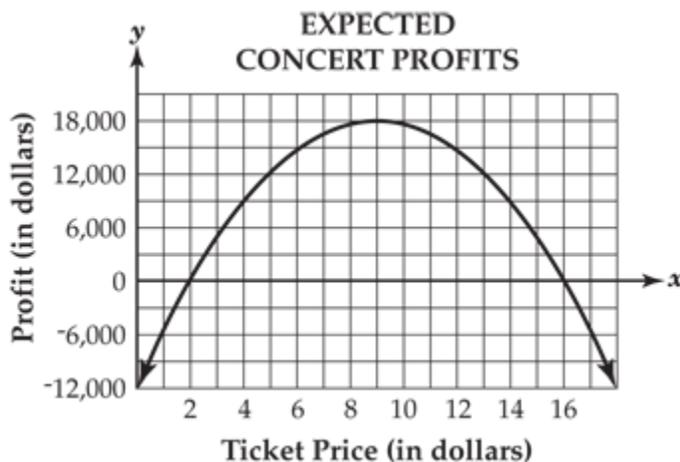
"Zeros" refers to the x-intercepts of a graph, "roots" refers to the solution of an equation in the form  $p(x) = 0$ .

Functions may include step, absolute value, or piece-wise functions.

Public Release - Selected Response Item - Released in 2009

Algebra/Data Analysis Indicator 1.2.4

The graph below models the relationship between the ticket price for a concert and the expected profits.



Which of these best describes the zero(s) of this function?

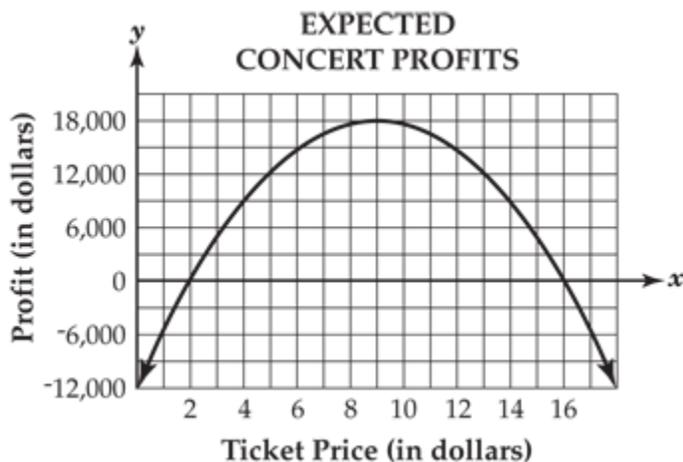
- A. 9 is the zero, and indicates when profit is at the maximum
- B. -12,000 is the zero, and indicates the cost to put on the concert
- C. 2 and 16 are the zeros, and indicate the ticket price for which the profit is 0
- D. 2 and 16 are the zeros, and indicate the number of tickets sold for which the profit is 0

Correct Answer

C. 2 and 16 are the zeros, and indicate the ticket price for which the profit is 0

## Item

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