

Objective: Interpret the graph of a quadratic function given a context.

Ex) A tennis ball is tossed upward from a balcony. The height of the ball above the ground, in feet, at a time of t seconds can be modeled by the function shown in the graph.

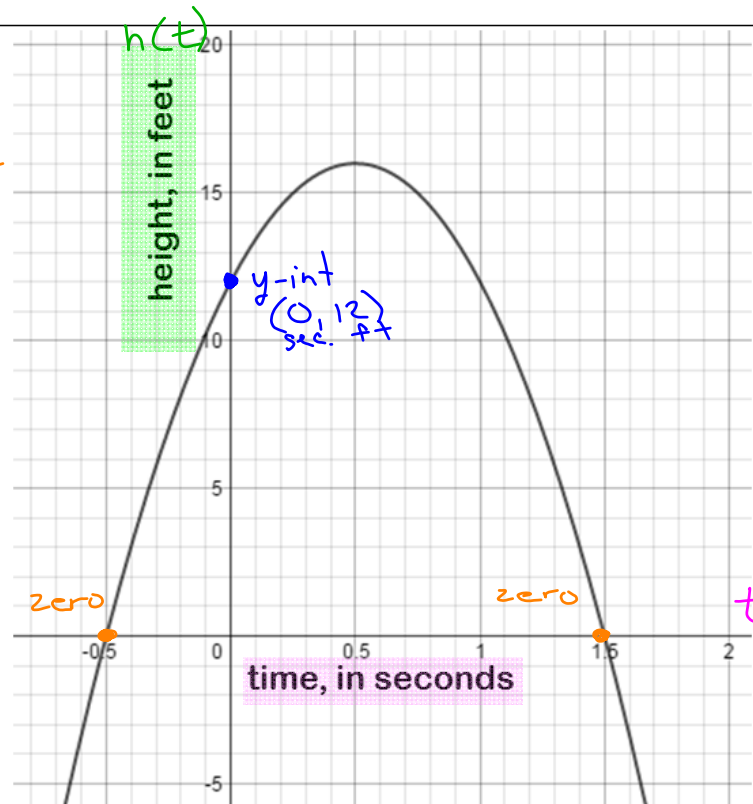
a) Explain what the zeros mean in terms of the context.

The zero of -0.5 sec doesn't make sense in terms of the context because time can't be negative.

The zero of 1.5 sec means the tennis ball hits the ground after 1.5 seconds.

b) Explain what the y-intercept means in terms of the context.

The y-intercept of $(0, 12)$ means the tennis ball was thrown from a height of 12 feet.



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Ex) The path of a football that is punted is shown in the graph, where y represents the height of the ball in feet and x is the horizontal distance from the goal line in yards.

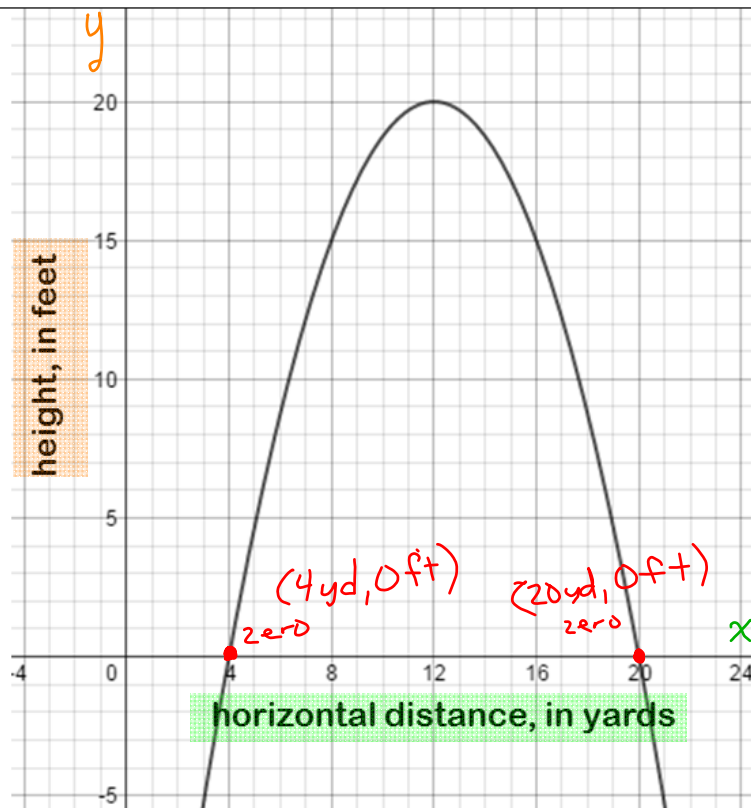
a) Explain what the zeros mean in terms of the context.

The zero of 4 yd means the football was punted from a distance of 4 yards from the goal line.

The zero of 20 yd means the football hit the ground 20 yards from the goal line.

b) Explain what the y -intercept means in terms of the context.

The y -intercept is negative so it doesn't make sense in terms of the context because the height can't be negative.

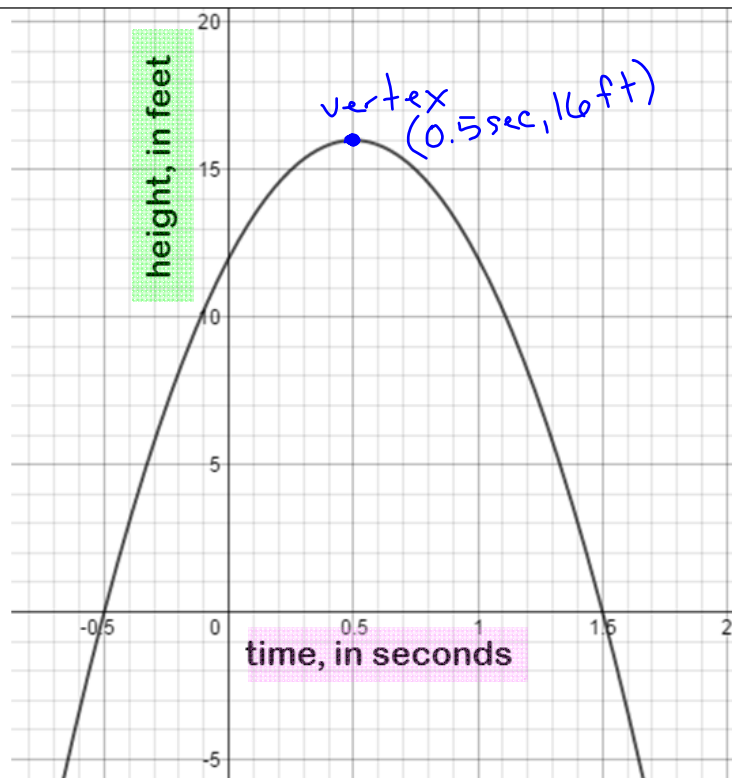


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c) Explain what the vertex means in terms of the context.

The vertex $(0.5 \text{ sec}, 16 \text{ ft})$ means the tennis ball reaches a maximum height of 16 feet after 0.5 seconds.

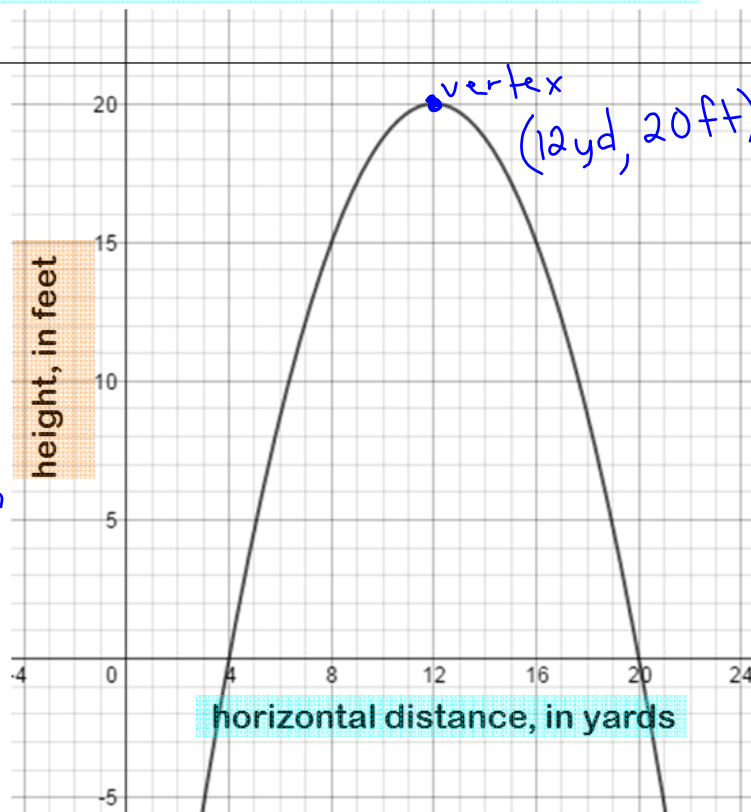


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Ex) The path of a football that is punted is shown in the graph, where y represents the height of the ball in feet and x is the horizontal distance from the goal line in yards.

c) Explain what the vertex means in terms of the context.

The vertex (12 yd, 20 ft) means the football reaches a maximum height of 20 feet when it is a distance of 12 yards from the goal line.

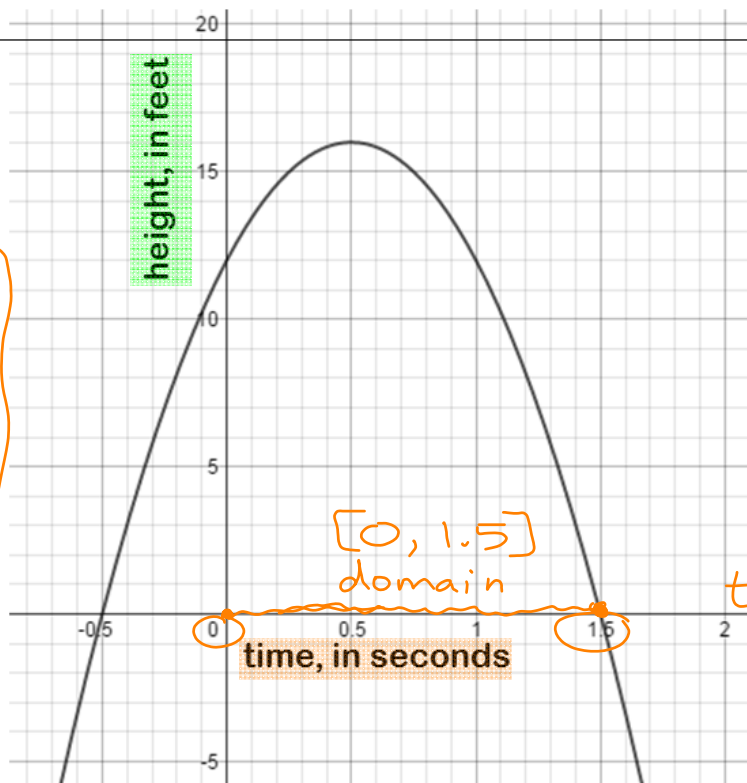


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Ex) A tennis ball is tossed upward from a balcony. The height of the ball above the ground, in feet, at a time of t seconds can be modeled by the function shown in the graph.

d) What is the domain of the function? Explain using words in terms of the context and write as an interval.

The domain represents time from 0 seconds to 1.5 seconds.
interval: $[0, 1.5]$



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d) What is the domain of the function? Explain using words in terms of the context and write as an interval.

The domain represents the horizontal distance from the goal line from 4 yards to 20 yards.

interval: $[4, 20]$

