

Quadratic Applications

Practice Worksheet

- ① A square is transformed into a rectangle by increasing the length by 8 inches and the width by 5 inches. If the area of the resulting rectangle is 108 square inches, algebraically determine the length of each side of the original square.

- ② Alex has a rectangular garden with a width that is 2 feet shorter than twice the length and an area of 60 square feet. Find the length and the width.

- ③ The height of a golf ball hit into the air is modeled by the equation $h = -16t^2 + 68t$, where h represents the height, in feet, and t represents the number of seconds that have passed since the ball was hit.

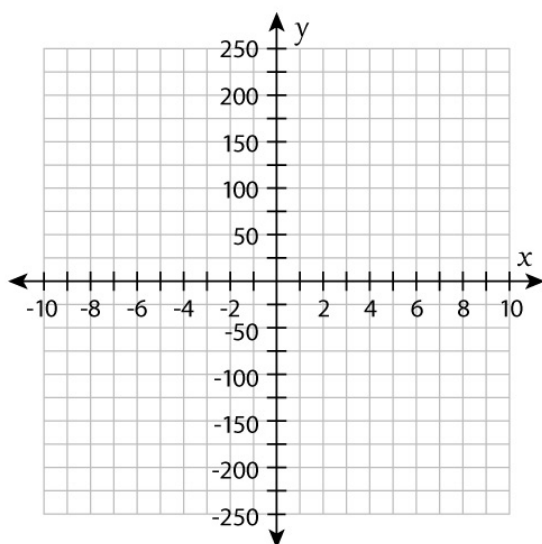
- ① Find the height of the ball after 2 seconds.

- ② How long does it take the ball to touch the ground?

- ④ The height h in feet of a ball t seconds after being tossed upwards is given by the formula $h = -16t^2 + 80t$

- ① Complete the given table of values

- ② Sketch the graph



- ③ After how much time will the ball touch the ground?

- ④ Find the maximum height attained by the ball.

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Answers

- ① A square is transformed into a rectangle by increasing the length by 8 inches and the width by 5 inches. If the area of the resulting rectangle is 108 square inches, algebraically determine the length of each side of the original square.

4 inches

- ② Alex has a rectangular garden with a width that is 2 feet shorter than twice the length and an area of 60 square feet. Find the length and the width.

Length = 6 feet, width = 10 feet

- ③ The height of a golf ball hit into the air is modeled by the equation $h = -16t^2 + 68t$, where h represents the height, in feet, and t represents the number of seconds that have passed since the ball was hit.

- ① Find the height of the ball after 2 seconds.

32 feet

- ② How long does it take the ball to touch the ground?

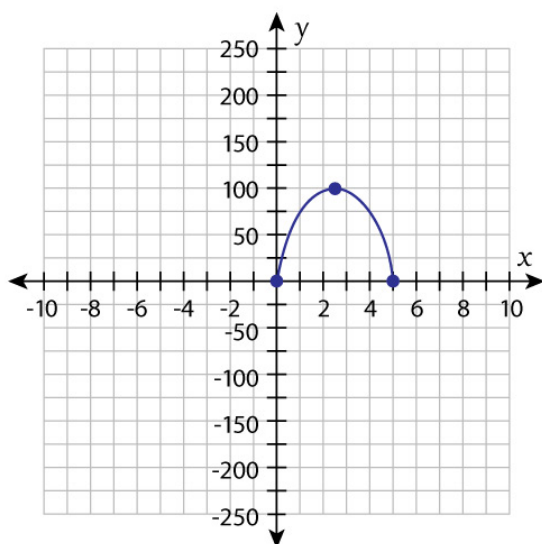
3 seconds

- ④ The height h in feet of a ball t seconds after being tossed upwards is given by the formula $h = -16t^2 + 80t$

- ① Complete the given table of values

t	0	1	2	3	4	5
h	0	64	96	96	64	0

- ② Sketch the graph



- ③ After how much time will the ball touch the ground?

5 seconds

- ④ Find the maximum height attained by the ball.

100ft