

The height,  $h(t)$ , in feet, of an object shot from a cannon with initial velocity of 20 feet per second can be modeled by the equation  $h(t) = -16t^2 + 20t + 6$ , where  $t$  is the time, in seconds, after the cannon is fired. What is the maximum altitude that the object reaches?

- A 13.5 feet
- B 12.25 feet
- C 10.25 feet
- D 1.5 feet

A ball is thrown upward. Its height ( $h$ , in feet) is given by the function  $h = -16t^2 + 64t + 3$ , where  $t$  is the length of time (in seconds) that the ball has been in the air. What is the maximum height that the ball reaches?

- A 3 ft
- B 51 ft
- C 63 ft
- D 67 ft

Congruent squares, with side lengths of  $x$ , are cut from the corners of a 12-inch-by-16-inch piece of cardboard to form an open box. Which equation models the surface area,  $y$ , of the open box after the corners are cut away?

- A  $y = (16 - 2x)(12 - 2x)$
- B  $y = (16 - 2x)(12 - 2x) + 4x^2$
- C  $y = 192 - 16x^2$
- D  $y = 192 - 4x^2$

The height (in feet) above the ground  $H(t)$  at time  $t$  (in seconds) of an object thrown down from a cliff is represented by the function  $H(t) = -4.9t^2 + 12t + 30$ . At what height was the object when it was released?

- A. 31.7 feet
- B. 30 feet
- C. 27.8 feet
- D. 25 feet

If an object is thrown upward from an 80-foot-high platform with an initial velocity of 64 feet per second, then its height in feet is given by  $s(t) = -16t^2 + 64t + 80$  where  $t$  is time in seconds. What is the maximum height reached by the ball?

- A 64 feet
- B 80 feet
- C 144 feet
- D 272 feet