

Use factoring to solve the quadratic equation.

1) $x^2 + 7x - 18 = 0$

2) $6x^2 + 27x = 0$

3) $x^2 - 9 = 8x$

4) $9x^2 = 7x$

$$5) \frac{x^2}{120} - \frac{11}{60}x + 1 = 0$$

Use factoring to solve the polynomial equation.

$$6) 5x^3 + 4x^2 = 125x + 100$$

Solve the problem.

7) If an object is projected upward with an initial velocity of 96 ft per sec from a height h of 112 ft, then its height t sec after it is projected is defined by the equation $h = -16t^2 + 96t + 112$. How many sec after it is projected will it hit the ground?

8) If the sides of a square are increased by 2 meters, the area becomes 81 square meters. Find the length of a side of the original square.



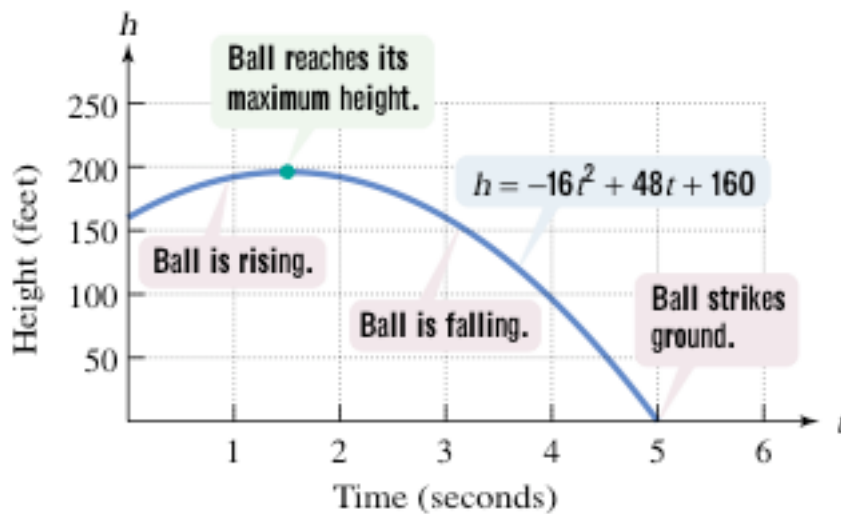
FIGURE 7.1

You throw a ball straight up from a rooftop 160 feet high with an initial speed of 48 feet per second. The formula

$$h = -16t^2 + 48t + 160$$

describes the ball's height above the ground, h , in feet, t seconds after you throw it. The ball misses the rooftop on its way down and eventually strikes the ground. The situation is illustrated in Figure 7.1. How long will it take for the ball to hit the ground?

The graph below shows the path of the ball at any point in time.



- High far off the ground is the ball when the ball is thrown? _____
- High far off the ground is the ball when the ball is at its highest? _____
- Estimate the time when the ball at the highest point. _____
- Estimate the time when the ball is 100 feet from the ground? _____
- Calculate the time when the ball hits the ground and verify it with what you see on the graph. _____

Answer Key

Testname: 10.7_PRACTICEPP

1) $\{-9, 2\}$

2) $\{-\frac{9}{2}, 0\}$

3) $\{-1, 9\}$

4) $\{\frac{7}{9}, 0\}$

5) $\{10, 12\}$

6) $\{-5, -\frac{4}{5}, 5\}$

7) ~~7 sec.~~

8) 7 m

9a) 160 ft

b) 200 ft

c) $1\frac{1}{2}$ sec

d) 4 sec

e) 5 sec.