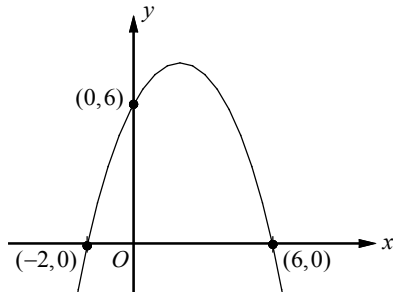


Chapter 11 Practice Test

1



The graph of the quadratic function above shows two x -intercepts and a y -intercept. Which of the following equations represents the graph of the quadratic function above?

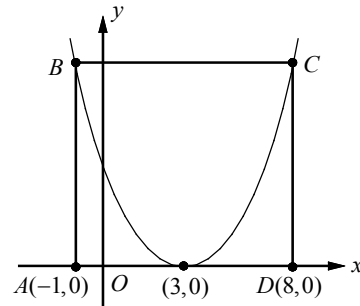
- A) $y = -\frac{1}{2}(x-1)^2 + 9$
- B) $y = -\frac{1}{2}(x-2)^2 + 8$
- C) $y = -\frac{1}{2}(x-2)^2 + 9$
- D) $y = -\frac{1}{2}(x-3)^2 + 8$

2

If $(x+y)^2 = 324$ and $(x-y)^2 = 16$, what is the value of xy ?

- A) 33
- B) 55
- C) 77
- D) 99

3



In the figure above, the vertex of the graph of the quadratic function is at $(3, 0)$. The points B and C lie on the parabola. If $ABCD$ is a rectangle with perimeter 38, which of the following represents the equation of the parabola?

- A) $y = \frac{2}{5}(x-3)^2$
- B) $y = \frac{5}{8}(x-3)^2$
- C) $y = \frac{3}{4}(x-3)^2$
- D) $y = \frac{7}{8}(x-3)^2$

4

If $(ax+b)(2x-5) = 12x^2 + kx - 10$ for all values of x , what is the value of k ?

- A) -26
- B) -10
- C) 24
- D) 32

Questions 5-8 refer to the following information.

$$h = -\frac{1}{2}gt^2 + v_0t + h_0$$

The equation above describes the motion of an object thrown upward into the air. In the equation, g is the acceleration due to gravity (9.8m/s^2), t is the time elapsed since the object was thrown upward, v_0 is the initial speed of the object, h_0 is the initial height from which the object was thrown, and h is the height of the object above the ground t seconds after the object was thrown.

5

Which of the following equations represents the motion of the object, if the object was thrown upward from 40 meters above the ground with an initial speed of 35 meters per second (m/s)?

- A) $h = -9.8t^2 + 40t + 35$
- B) $h = -9.8t^2 + 35t + 40$
- C) $h = -4.9t^2 + 40t + 35$
- D) $h = -4.9t^2 + 35t + 40$

6

How many seconds will it take the object to reach its maximum height? (hint: The function has a maximum point at $t = -\frac{b}{2a}$.)

- A) $\frac{15}{7}$
- B) $\frac{20}{7}$
- C) $\frac{25}{7}$
- D) $\frac{30}{7}$

7

What is the maximum height from the ground the object will reach, to the nearest meter?

- A) 103
- B) 112
- C) 125
- D) 133

8

How long will it take the object to hit the ground, to the nearest second? (hint: Height of the object is zero when the object hits the ground.)

- A) 7
- B) 8
- C) 9
- D) 10

9

$$h = -16t^2 + h_0$$

The equation above describes the height of an object t seconds after it dropped from a height of h_0 feet above the ground. If a hiker dropped a water bottle from a cliff 150 feet above the ground, how many seconds will it take to hit the ground? (Round your answer to the nearest second.)

- A) 2
- B) 3
- C) 4
- D) 5