Name: Date: Period:

1. Vanessa throws a tennis ball in the air. The function $h(t) = -16t^2 + 45t + 7$ represents the distance, in feet, that the ball is from the ground at any time t. At what time, to the nearest tenth of a second, is the ball at its maximum height?

2. The height of a swimmer's dive off a 10-foot platform into a diving pool is modeled by the equation $y = 2x^2 – 12x + 10$, where x represents the number of seconds since the swimmer left the diving board and y represents the number of feet above or below the water's surface. What is the farthest depth below the water's surface that the swimmer will reach?

   A. 6 feet B. 8 feet C. 10 feet D. 12 feet

3. Solve for the positive value of x: $x^2 – 5x – 24 = 0$

4. What is the solution set of the equation $x^2 – 3x – 10 = 0$?

   A. (5, -2) B. (-5, -2) C. (5, 2) D. (-5, 2)

5. Solve for the positive value of x: $x^2 – 64 = 0$

6. Solve algebraically for the positive value of x, $x \neq 0$, and check:

$$\frac{2x+5}{7} = \frac{1}{x}$$

7. One root of the equation $2x^2 – x – 15 = 0$ is:

   A. $\frac{5}{2}$ B. $\frac{3}{2}$ C. 3 D. -3

8. Which step can be used when solving $x^2 – 6x – 25 = 0$ by completing the square?

   A. $x^2 – 6x + 9 = 25 + 9$

   B. $x^2 – 6x – 9 = 25 – 9$

   C. $x^2 – 6x + 36 = 25 + 36$

   D. $x^2 – 6x – 36 = 25 – 36$

9. Solve for the positive value of x: $3x^2 – 27 = 0$

10. What is the solution set of the equations $(x – a)(x + b) = 0$

    A. {a, -b} B. {-a, b} C. {-a, -b} D. Φ

11. Solve for the positive value of x: $\frac{1}{4}x^2 = 16$

12. Solve the equation $2x^2 – 98 = 0$ for the positive value of x

13. The solution to the quadratic equation: $2x^2 + 5x - 1 = 0$ is:

A. $\frac{5 \pm \sqrt{17}}{4}$

C. $\frac{5 \pm \sqrt{33}}{4}$

B. $\frac{-5 \pm \sqrt{17}}{4}$

D. $\frac{-5 \pm \sqrt{33}}{4}$

14. What is the solution set of the equation: $2x^2 + 3x - 2 = 0$?

A. $\{-\frac{1}{2}, 2\}$ B. $\{\frac{1}{2}, -2\}$ C. $\{\frac{1}{2}, 2\}$ D. $\{-\frac{1}{2}, -2\}$

15. What are the values of x in the equation: $x^2 + 4x - 1 = 0$?

A. $-4 \pm \sqrt{5}$

C. $-2 \pm \sqrt{5}$

B. $-4 \pm \sqrt{3}$

D. $-2 \pm \sqrt{3}$

16. Solve the equation $6x^2 - 2x - 3 = 0$ and express the answer in simplest radical form.

17. The solution of the quadratic equation $2x^2 - x - 14 = 0$ is:

A. $\frac{-1 \pm \sqrt{111}}{2}$

C. $\frac{1 \pm \sqrt{113}}{4}$

B. $\frac{1 \pm \sqrt{111}}{4}$

D. $\frac{-1 \pm \sqrt{113}}{2}$

18. What is the solution set of the equation: $2x^2 + x - 3 = 0$?

A. $\{\frac{1}{2}, -3\}$ B. $\{-\frac{3}{2}, 1\}$ C. $\{-\frac{1}{2}, -3\}$ D. $\{\frac{3}{2}, 1\}$

19. What is the negative value of x that satisfies the equation $2x^2 + 5x - 3 = 0$?

A. -1

C. -3

B. $-\frac{1}{2}$

D. $-\frac{2}{3}$

20. What is the solution set of the equation: $x^2 - 36 = 0$?