Exercises:

1. Simplify $(8 - 9i) + (3 + 4i)$.

   A. $17 + 7i$ B. $11 - 5i$

   C. $-i + 17$ D. $11 + 5i$

2. Find the product of $-15i$ and its conjugate.

   A. -225 B. $225i$

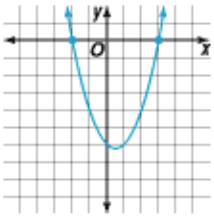
   C. 225 D. $15i$

3. Which is the quadratic term in the function $f(x) = 3x^2 + 6x - 4$?

   A. x^2 B. $3x^2 + 6x - 4$

   C. $3x^2$ D. 3

4. Use the graph to determine the solution(s) of $x^2 - x - 6 = 0$.



   A. -6 B. $-3, 2$

   C. -2 D. $-2, 3$

5. Find the axis of symmetry of the graph of $g(x) = x^2 - 5x + 2$.

   A. $x = \frac{5}{2}$ B. $x = -\frac{5}{2}$

   C. $x = -5$ D. $x = 2$

6. Solve $x^2 - 6x = 0$ by graphing or by factoring.

   A. $-6, 0$ B. -6

   C. 0 D. $0, 6$

7. Which function has a graph that opens upward?

A. $f(x) = -5x^2 - 6x - 3$
B. $f(x) = 2x^2 - 5x - 2$
C. $f(x) = -x^2 + 3x - 12$
D. $f(x) = -x^2 + 4x + 7$

8. Find the axis of symmetry of the graph of $f(x) = 4x^2 - 4x + 4$.

A. $y = 3$
B. $x = 4$
C. $x = \frac{1}{2}$
D. $x = 2$

9. Solve $9t^2 - 15t + 4 \geq 0$.

A. $\left\{t \middle| -\frac{4}{3} \leq t \leq \frac{1}{3}\right\}$
B. $\left\{t \middle| t \leq \frac{1}{3} \text{ or } t \geq \frac{4}{3}\right\}$
C. $\left\{t \middle| -\frac{1}{3} \leq t \leq \frac{4}{3}\right\}$
D. $\left\{t \middle| t \leq -\frac{4}{3} \text{ or } t \geq \frac{1}{3}\right\}$

10. Stan the Hot Dog Man sells 100 hot dogs per day for $2 each, so his daily revenue is $200. He estimates that for every 25 cents he increases the price of a hot dog, he will sell 5 fewer. What range of prices can he charge so that his daily revenue is at least $225?

A. $2.50-$4.50
B. $2.25-$2.50
C. $2.00-$4.00
D. $3.00-$4.50

11. Factor $4x^2 - 5x - 6$.

A. $(4x-3)(x+2)$
B. $(4x + 3)(x - 2)$
C. $(4x+3)(x+2)$
D. $(4x-3)(x-2)$

12. Factor $x^2 - 7x + 12$.

A. $(x + 3)(x + 4)$
B. $(x - 3)(x - 4)$
C. $(x + 6)(x + 2)$
D. $(x - 6)(x - 2)$

13. Factor $x^2 - 4x - 32$.

A. $(x + 8)(x - 4)$
B. $(x - 8)(x + 4)$
C. $(x + 16)(x - 2)$
D. $(x - 16)(x + 2)$

14. A quadratic function has two real roots. How many times does the graph cross the x-axis?

A. 2
B. 0
C. 1
D. cannot be determined from given information.

15. Solve $x^2 + 2x + 3 = 0$ by completing the square.

A. $1 \pm i\sqrt{2}$
B. $-1 \pm \sqrt{2}$
C. $-1 \pm i\sqrt{2}$
D. $1 \pm \sqrt{2}$

16. Solve $x^2 - 11x + 24 = 0$ by using the quadratic formula.

A. –3, –8
B. 7, –18
C. 3, 8
D. 6, 16

17. If a perfect square is equal to a constant, what is the best method to solve the quadratic equation?

A. Square Root Property
B. Quadratic Formula
C. Completing the Square
D. Factoring

18. Solve $4x^2 + 20x + 25 = 49$ by using the Square Root Property.

A. {–6, 1}
B. {3, 1}
C. {5, 3}
D. {6, 2}