

**Core Algebra 2**  
**Quiz 3.1-3.4**

NAME \_\_\_\_\_

Write the letter for the best answer.

Solve the equation by Graphing.

1.  $f(x) = x^2 + 4x - 12$

- A. 2, 6
- B. -2, 6
- C. 2, -6
- D. -2, -6

2.  $y = 3x^2 - 3x - 6$

- A. 1, 2
- B. -1, 2
- C. 1, -2
- D. -1, -2

3.  $4x^2 = -3x + 5$

- A. -1.59, 0.67
- B. -1.65, 0.76
- C. -1.48, 0.87
- D. -1.55, 0.80

Solve the equation using Square Roots.

4.  $x^2 + 17 = 42$

- A.  $\pm\sqrt{59}$
- B.  $\pm 25$
- C.  $\pm 5\sqrt{5}$
- D.  $\pm 5$

5.  $x^2 - 23 = 42$

- A.  $\pm 16\sqrt{5}$
- B.  $\pm 4\sqrt{5}$
- C.  $\pm 8\sqrt{5}$
- D.  $\pm 6\sqrt{5}$

6.  $x^2 + 11 = 56$

- A.  $\pm 3\sqrt{5}$
- B.  $\pm 9\sqrt{5}$
- C.  $\pm 5\sqrt{9}$
- D.  $\pm 4\sqrt{5}$

Solve the equation by Factoring.

7.  $0 = x^2 + 7x - 18$

- A. 2, 9
- B. -2, 9
- C. 2, -9
- D. -2, -9

8.  $y = 3x^2 - 2x - 5$

- A.  $\frac{5}{3}, -1$
- B.  $-\frac{5}{3}, 1$
- C.  $\frac{5}{3}, -1$
- D.  $-\frac{5}{3}, -1$

9.  $2x^2 + 9x - 23 = 7x - 11$

- A. 0, -2, 3
- B. 2, -3
- C. 0, 2, -3
- D. -2, 3

Find the square root of each.

10.  $\sqrt{-64}$

- A. -8
- B.  $\pm 8$
- C.  $8i$
- D.  $\emptyset$

11.  $\sqrt{-32}$

- A.  $8i\sqrt{4}$
- B.  $16i\sqrt{2}$
- C.  $4i\sqrt{2}$
- D.  $\emptyset$

12.  $2\sqrt{-63}$

- A.  $6i\sqrt{7}$
- B.  $18i\sqrt{7}$
- C.  $5i\sqrt{7}$
- D.  $\emptyset$

**Simplify each expression.**

13.  $(5 + 4i) + (7 - 3i)$

- A. 47  
 B.  $12 - 7i$   
 C.  $35 - 12i$   
 D.  $12 + i$

14.  $(-8 - 2i) - (5 - 9i)$

- A.  $-3 + 7i$   
 B.  $-40 - 18i$   
 C.  $-3 - 11i$   
 D.  $-13 + 7i$

15.  $(3 + 2i)(4 - 6i)$

- A.  $24 - 26i$   
 B.  $24 - 10i$   
 C. 24  
 D.  $12 - 10i - 12i^2$

**Simplify each expression.**

16.  $(2 + 3i)(4 - 5i)$

- A.  $23 + 2i$   
 B.  $-7 - 22i$   
 C.  $-7 - 2i$   
 D. 23

17.  $(5 + 2i)(5 - 2i)$

- A. 29  
 B.  $29 - 10i$   
 C. 21  
 D.  $21 + 10i$

18.  $(3 - 7i)^2$

- A.  $-58 - 42i$   
 B. -58  
 C.  $-40 - 42i$   
 D. -40

**Find the zeros of the function.**

19.  $0 = x^2 + 18$

- A.  $\pm 9i\sqrt{2}$   
 B.  $\pm 3i\sqrt{2}$   
 C.  $\pm\sqrt{-18}$   
 D.  $\emptyset$

20.  $x^2 - 17 = -71$

- A.  $\pm 9i\sqrt{6}$   
 B.  $\pm 3i\sqrt{6}$   
 C.  $\pm 6i\sqrt{3}$   
 D.  $\emptyset$

21.  $f(x) = 2x^2 + 54$

- A.  $\pm 3i\sqrt{3}$   
 B.  $\pm 9i\sqrt{9}$   
 C.  $\pm 9i\sqrt{3}$   
 D.  $\emptyset$

**Solve the equation by using the Quadratic Formula.**

22.  $x^2 + 4x - 32 = 0$

- A. -8, 16  
 B. 8, -16  
 C. -4, 8  
 D. 4, -8

23.  $3x^2 - 5x = 4$

- A.  $\frac{-5 \pm \sqrt{23}}{6}$   
 B.  $\frac{5 \pm \sqrt{29}}{6}$   
 C.  $\frac{5 \pm \sqrt{73}}{6}$   
 D.  $\frac{-5 \pm \sqrt{13}}{6}$

24.  $2x^2 + 9 = 12x$

- A.  $\frac{12 \pm 6\sqrt{2}}{4}$   
 B.  $\frac{6 \pm 3\sqrt{6}}{2}$   
 C.  $\frac{12 \pm \sqrt{216}}{4}$   
 D.  $\frac{6 \pm 3\sqrt{2}}{2}$