

## 11.1 Solving Quadratic Equations by the Square Root Property

## 11.2 Solving Quadratic Equations by Completing the Square

## 11.3 Solving Quadratic Equations by the Quadratic Formula

Solve the equation.

1)  $x^2 = 49$  A) {8, -8} B) {7, -7} C) {7} D) {24.5} 1) \_\_\_\_\_

2)  $p^2 = 20$  A)  $\{2\sqrt{5}, -2\sqrt{5}\}$  B) {400} C) {10} D)  $\{\sqrt{20}\}$  2) \_\_\_\_\_

3)  $(x - 16)^2 = 9$  A) {19} B) {13, 19} C) {-13, -19} D) {7} 3) \_\_\_\_\_

4)  $(4s + 3)^2 = 4$  A)  $\left\{-\frac{1}{4}, 0\right\}$  B)  $\left\{\frac{1}{4}\right\}$  C)  $\left\{-\frac{1}{4}, -\frac{5}{4}\right\}$  D)  $\left\{\frac{1}{4}, \frac{5}{4}\right\}$  4) \_\_\_\_\_

Find the complex solutions of the equation.

5)  $x^2 = -49$  A) {-7} B)  $\{7i, -7i\}$  C) {7, -7} D)  $\{-7i\}$  5) \_\_\_\_\_

6)  $(p + 3)^2 = -6$  A)  $\{-3 + i\sqrt{6}, -3 - i\sqrt{6}\}$  B)  $\{-3 + i\sqrt{6}\}$  C)  $\{-3 + \sqrt{6}, -3 - \sqrt{6}\}$  D)  $\{-3 - i\sqrt{6}\}$  6) \_\_\_\_\_

Solve the equation by completing the square.

7)  $a^2 - 8a - 20 = 0$  A) {-18, -2} B) {10, -2} C) {4, -4} D) {-10, 2} 7) \_\_\_\_\_

8)  $p^2 + 3p - 9 = 0$  A)  $\{-3 + 3\sqrt{5}, -3 - 3\sqrt{5}\}$  B)  $\left\{\frac{-3 - 3\sqrt{5}}{2}\right\}$  C)  $\left\{\frac{-3 + 3\sqrt{5}}{2}, \frac{-3 - 3\sqrt{5}}{2}\right\}$  D)  $\left\{\frac{3 + 3\sqrt{5}}{2}\right\}$  8) \_\_\_\_\_

9)  $9x^2 + 3x - 6 = 0$  A)  $\left\{\frac{2}{3}, -1\right\}$  B)  $\left\{\frac{3}{2}, 0\right\}$  C)  $\left\{\frac{3}{2}, -1\right\}$  D)  $\left\{\frac{3}{2}, 1\right\}$  9) \_\_\_\_\_

Use the discriminant to determine whether the solutions for the equation are two rational numbers, one rational number, two irrational numbers, or two nonreal complex numbers. Do not actually solve.

10)  $s^2 + 5s - 6 = 0$  A) two nonreal complex numbers B) one rational number 10) \_\_\_\_\_  
C) two rational numbers D) two irrational numbers

11)  $t^2 - 2t + 1 = 0$

- A) two irrational numbers  
C) two rational numbers

- B) two nonreal complex numbers  
D) one rational number

11) \_\_\_\_\_

12)  $2y^2 = -3y - 5$

- A) two rational numbers  
C) two irrational numbers

- B) one rational number  
D) two nonreal complex numbers

12) \_\_\_\_\_

Find the complex solutions of the given equation.

13)  $x^2 + x + 2 = 0$

- A)  $\left\{ \frac{1}{2} + \frac{\sqrt{7}}{2}i, \frac{1}{2} - \frac{\sqrt{7}}{2}i \right\}$   
C)  $\left\{ -\frac{1}{2} + \frac{\sqrt{7}}{2}i, -\frac{1}{2} - \frac{\sqrt{7}}{2}i \right\}$

- B)  $\left\{ \frac{1}{2} + \frac{\sqrt{7}}{2}, \frac{1}{2} - \frac{\sqrt{7}}{2} \right\}$   
D)  $\left\{ -\frac{1}{2} + \frac{\sqrt{7}}{2}, -\frac{1}{2} - \frac{\sqrt{7}}{2} \right\}$

13) \_\_\_\_\_

14)  $6m^2 - 5m + 2 = 0$

- A)  $\left\{ \frac{5}{12} + \frac{\sqrt{23}}{12}, \frac{5}{12} - \frac{\sqrt{23}}{12} \right\}$   
C)  $\left\{ -\frac{5}{12} + \frac{\sqrt{23}}{12}i, -\frac{5}{12} - \frac{\sqrt{23}}{12}i \right\}$

- B)  $\left\{ -\frac{5}{12} + \frac{\sqrt{23}}{12}, -\frac{5}{12} - \frac{\sqrt{23}}{12} \right\}$   
D)  $\left\{ \frac{5}{12} + \frac{\sqrt{23}}{12}i, \frac{5}{12} - \frac{\sqrt{23}}{12}i \right\}$

14) \_\_\_\_\_

Use the quadratic formula to solve the given equation. (Solutions are real numbers.)

15)  $3n^2 = -12n - 5$

- A)  $\left\{ \frac{-6 + \sqrt{21}}{6}, \frac{-6 - \sqrt{21}}{6} \right\}$   
C)  $\left\{ \frac{-6 + \sqrt{21}}{3}, \frac{-6 - \sqrt{21}}{3} \right\}$

- B)  $\left\{ \frac{-6 + \sqrt{51}}{3}, \frac{-6 - \sqrt{51}}{3} \right\}$   
D)  $\left\{ \frac{-12 + \sqrt{21}}{3}, \frac{-12 - \sqrt{21}}{3} \right\}$

15) \_\_\_\_\_

Use the quadratic formula to solve the given equation.

16)  $x^2 + x + 3 = 0$

- A)  $\left\{ \frac{-1 + i\sqrt{11}}{2}, \frac{-1 - i\sqrt{11}}{2} \right\}$   
C)  $\frac{1 \pm \sqrt{11}}{2}$

- B)  $\frac{-1 \pm \sqrt{11}}{2}$   
D)  $\left\{ \frac{1 + i\sqrt{11}}{2}, \frac{1 - i\sqrt{11}}{2} \right\}$

16) \_\_\_\_\_

Answer Key

Testname: PRACTICE19A

- 1) B
- 2) A
- 3) B
- 4) C
- 5) B
- 6) A
- 7) B
- 8) C
- 9) A
- 10) C
- 11) D
- 12) D
- 13) C
- 14) D
- 15) C
- 16) A