

All Methods of Solving Quadratics

Solve each equation using factoring.

1) $(2r - 7)(5r - 6) = 0$

2) $x^2 + 7x + 10 = 0$

3) $x^2 = 6x + 7$

4) $x^2 - 4x = 0$

Solve each equation by taking square roots.

5) $7r^2 = 63$

6) $(x - 5)^2 = 40$

Find the value of c that completes the square.

7) $x^2 + 32x + c$

- A) 9 B) 256
C) $\frac{25}{4}$ D) 1024

8) $r^2 + 15r + c$

- A) 225 B) $\frac{15}{2}$
C) $\frac{225}{4}$ D) $-\frac{225}{4}$

9) $p^2 + 10p + c$

- A) $\frac{49}{4}$ B) 121
C) 25 D) 11

10) $p^2 + 20p + c$

- A) 100 B) -100
C) $\frac{841}{324}$ D) $\frac{289}{4}$

Solve each equation by completing the square.

11) $m^2 - 8m - 33 = 0$

12) $n^2 - 2n - 14 = -4$

Solve each equation with the quadratic formula.

13) $12k^2 - 8k - 24 = 0$

14) $4x^2 - 4x - 143 = 0$

15) $8p^2 - 8p = 12$

16) $9x^2 + 9x = 2$

Solve each equation by any method.

17) $n^2 = -60 + 16n$

- A) $\{10, 6\}$
- B) $\{8 + 2\sqrt{31}, 8 - 2\sqrt{31}\}$
- C) $\{-1, -3\}$
- D) $\{-8 + 2\sqrt{31}, -8 - 2\sqrt{31}\}$

18) $4x^2 - 65 = 16x$

- A) No solution.
- B) $\left\{2\frac{1}{3}, -4\frac{1}{3}\right\}$
- C) $\left\{6\frac{1}{2}, -2\frac{1}{2}\right\}$
- D) $\{8 + \sqrt{39}, 8 - \sqrt{39}\}$

19) $v^2 = 54 - 12v$

- A) $\{4 + 5\sqrt{3}, 4 - 5\sqrt{3}\}$
- B) $\{-6 + 3\sqrt{10}, -6 - 3\sqrt{10}\}$
- C) $\left\{\frac{-2 + \sqrt{43}}{2}, \frac{-2 - \sqrt{43}}{2}\right\}$
- D) $\left\{\frac{-10 + \sqrt{610}}{10}, \frac{-10 - \sqrt{610}}{10}\right\}$

20) $5k^2 - 2 = -10k$

- A) $\{4, -14\}$
- B) $\left\{\frac{-5 + \sqrt{35}}{5}, \frac{-5 - \sqrt{35}}{5}\right\}$
- C) $\{5, -19\}$
- D) $\{4, -10\}$

21) Which function has 2 and -2 as its roots?

- A) $f(x) = (x + 2)^2$
- B) $f(x) = (x - 3)^2$
- C) $f(x) = x(x - 2)$
- D) $f(x) = (x - 2)(x + 2)$

22) Find the zeros of the function

$$y = 3x^2 + 14x - 5$$

- A) $\frac{1}{3}, -5$
- B) $3, -5$
- C) $-\frac{1}{3}, -5$
- D) $14, -5$