

Solving Quadratics by Completing the Square *fluency* *ANSWERS*

 Solve. Give exact answers.

1 $(x + 3)^2 = 5$ $x = -3 \pm \sqrt{5}$

2 $(x - 2)^2 = 7$ $x = 2 \pm \sqrt{7}$

3 $(x + 1)^2 = 12$ $x = -1 \pm 2\sqrt{3}$

4 $(x - 5)^2 = 18$ $x = 5 \pm 3\sqrt{2}$

5 $(x + 4)^2 = 3$ $x = -4 \pm \sqrt{3}$

6 $(x - 6)^2 = 20$ $x = 6 \pm 2\sqrt{5}$

 Solve by completing the square. Give exact answers.

7 $x^2 + 6x + 2 = 0$ $x = -3 \pm \sqrt{7}$

8 $x^2 - 4x - 1 = 0$ $x = 2 \pm \sqrt{5}$

9 $x^2 + 10x + 7 = 0$ $x = -5 \pm 3\sqrt{2}$

10 $x^2 - 8x + 13 = 0$ $x = 4 \pm \sqrt{3}$

11 $x^2 + 2x - 5 = 0$ $x = -1 \pm \sqrt{6}$

12 $x^2 - 12x + 6 = 0$ $x = 6 \pm \sqrt{30}$

 Solve by completing the square. Give exact answers.

13 $x^2 + 3x + 1 = 0$ $x = \frac{-3 \pm \sqrt{5}}{2}$

14 $x^2 - 5x + 2 = 0$ $x = \frac{5 \pm \sqrt{17}}{2}$

15 $x^2 + x - 3 = 0$ $x = \frac{-1 \pm \sqrt{13}}{2}$

16 $x^2 - 7x + 5 = 0$ $x = \frac{7 \pm \sqrt{29}}{2}$

17 $x^2 + 9x + 4 = 0$ $x = \frac{-9 \pm \sqrt{65}}{2}$

18 $x^2 - 3x - 5 = 0$ $x = \frac{3 \pm \sqrt{29}}{2}$

 Solve by completing the square. Give exact answers.

19 $2x^2 + 8x + 3 = 0$ $x = \frac{-4 \pm \sqrt{10}}{2}$

20 $3x^2 - 6x - 1 = 0$ $x = \frac{3 \pm 2\sqrt{3}}{3}$

21 $2x^2 - 4x - 7 = 0$ $x = \frac{2 \pm 3\sqrt{2}}{2}$

22 $2x^2 + 6x + 1 = 0$ $x = \frac{-3 \pm \sqrt{7}}{2}$

23 $4x^2 + 8x - 1 = 0$ $x = \frac{-2 \pm \sqrt{5}}{2}$

24 $3x^2 - 12x + 2 = 0$ $x = \frac{6 \pm \sqrt{30}}{3}$

 Solve by completing the square. Give your answers to 2 decimal places.

25 $x^2 + 4x - 3 = 0$ $x = -4.65$
 $x = 0.65$

26 $x^2 - 6x + 2 = 0$ $x = 0.35$
 $x = 5.65$

27 $x^2 + 5x + 1 = 0$ $x = -4.79$
 $x = -0.21$

28 $2x^2 + 4x - 9 = 0$ $x = -3.35$
 $x = 1.35$

29 $x^2 - 3x - 7 = 0$ $x = -1.54$
 $x = 4.54$

30 $3x^2 + 6x - 2 = 0$ $x = -2.29$
 $x = 0.29$