

Completing the Square Solutions

1. (a) $(x - 4)^2 - 19$
(b) $(x - 1)^2 - 6$
(c) $(x - 1)^2$
2. (a) $(x + 2)^2 - 10$
(b) $(x + \frac{9}{2})^2 - \frac{65}{4}$
(c) $(x - \frac{7}{2})^2 - \frac{61}{4}$
3. (a) $(-1, -7)$
(b) $(1, -4)$
(c) $(-\frac{1}{2}, 2)$
4. $(x + 1)^2$
5. $(x + 3)^2$
6. $(x - 4)^2$
7. $(x - 5)^2$
8. $(x + 2)^2$
9. $(x - 8)^2$
10. $(2x - 1)^2$
11. $(2x - 5)^2$
12. $(3x + 2)^2$
13. $(x - 3)^2 + 2; x = 3; 2$
14. $(x + 1)^2 + 5; x = -1; 5$
15. $(x + 4)^2 - 2; x = -4; -2$
16. $(x - 5)^2 - 6; x = 5; -6$
17. $(x + 6)^2 - 33; x = -6; -33$
18. $(x - 2)^2 + 3; x = 2; 3$

- 19. $(x - 3)^2 - 2 = 0; 3 \pm \sqrt{2}$
- 20. $(x - 5)^2 - 3; 5 \pm \sqrt{3}$
- 21. $(x + 1)^2 - 7 = 0; -1 \pm \sqrt{7}$
- 22. $(x + 2)^2 - 5 = 0; -2 \pm \sqrt{5}$
- 23. $(x + 2)^2 - 7 = 0; -2 \pm \sqrt{7}$
- 24. $(x + 1)^2 - 3 = 0; -1 \pm \sqrt{3}$
- 25. $(x - 1)^2 - 5 = 0; 1 \pm \sqrt{5}$
- 26. $(x + 6)^2 - 20 = 0; -6 \pm 2\sqrt{5}$
- 27. $(x - 4)^2 - 12 = 0; 4 \pm 2\sqrt{3}$