

Written Exercises

Solve. Express irrational solutions in simplest radical form. If the equation has no solution, write "no solution."

- A**
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|-----------------------|-----------------------|----------------------------|
| 1. $x^2 = 64$ | 2. $(y - 7)^2 = 0$ | 3. $t^2 = \frac{100}{169}$ |
| 4. $a^2 = -9$ | 5. $3x^2 = 108$ | 6. $6t^2 = 156$ |
| 7. $14t^2 = 126$ | 8. $x^2 - 48 = 0$ | 9. $x^2 + 32 = 0$ |
| 10. $m^2 - 54 = 0$ | 11. $6x^2 - 18 = 0$ | 12. $7m^2 - 42 = 0$ |
| 13. $4y^2 + 7 = 19$ | 14. $4r^2 - 7 = 29$ | 15. $3z^2 - 18 = 3$ |
| 16. $(x + 6)^2 = 16$ | 17. $(y - 6)^2 = 13$ | 18. $(y + 2)^2 = 12$ |
| 19. $(s - 7)^2 = 28$ | 20. $(z - 3)^2 = 32$ | 21. $2(x - 5)^2 = 18$ |
| 22. $5(m - 8)^2 = 25$ | 23. $8(x + 3)^2 = 56$ | 24. $6(z + 5)^2 = 42$ |
- B**
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|--|---|---|
| 25. $x^2 + 6x + 9 = 16$ | 26. $x^2 - 14x + 49 = 64$ | 27. $r^2 - 22r + 121 = 4$ |
| 28. $y^2 - 18y + 81 = 144$ | 29. $\frac{1}{5}x^2 - \frac{5}{49} = 0$ | 30. $\frac{1}{4}t^2 - \frac{9}{64} = 0$ |
| 31. $\frac{1}{5}r^2 - 2 = \frac{5}{6}$ | 32. $\frac{1}{6}x^2 - 4 = \frac{5}{6}$ | 33. $t^2 + 18t + 81 = 225$ |
| 34. $0.49x^2 + 2 = 3.96$ | 35. $1.44z^2 - 1.36 = -0.64$ | 36. $5(t + 2)^2 = \frac{3}{5}$ |
| 37. $4(x - 2)^2 = \frac{1}{49}$ | 38. $\left(y - \frac{3}{7}\right)^2 = -\frac{8}{9}$ | 39. $\left(z - \frac{3}{5}\right)^2 = \frac{7}{16}$ |

Solve each equation by factoring.

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|-------------------------------|-----------------------|--------------------------------|
| 40. $7y^3 - 28y = 0$ | 41. $7a^3 - 175a = 0$ | 42. $\frac{1}{4}t^3 - 16t = 0$ |
| 43. $4b^3 - \frac{1}{4}b = 0$ | 44. $8x^3 = 392x$ | 45. $8x^3 = 512x$ |

Solve.

- C**
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|------------------------|-----------------------|----------------------------|
| 46. $3(5x - 2)^2 = 27$ | 47. $5(6x - 1)^2 = 5$ | 48. $2(7x - 2)^2 + 5 = 11$ |
|------------------------|-----------------------|----------------------------|
49. How many different real-number solutions does $a(x + b)^2 = c$ have if:
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|--------------------------|--------------------------|
| a. $a > 0$ and $c > 0$? | b. $a < 0$ and $c < 0$? |
| c. $a < 0$ and $c > 0$? | d. $a > 0$ and $c = 0$? |

Mixed Review Exercises

Express each square as a trinomial.

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|-------------------------------------|-------------------------------------|--|--|
| 1. $(x - 11)^2$ | 2. $(2x + 5)^2$ | 3. $(6x - 7)^2$ | 4. $(-3c + 4)^2$ |
| 5. $\left(x + \frac{1}{2}\right)^2$ | 6. $\left(x + \frac{1}{3}\right)^2$ | 7. $\left(\frac{1}{2}x + \frac{2}{3}\right)^2$ | 8. $\left(\frac{1}{3}x + \frac{3}{4}\right)^2$ |