

Additional Exercises 7.6
Form I
Radical Equations

Solve each radical equation.

1. $\sqrt{x} = 5$ 1. _____

2. $\sqrt{x+3} = 6$ 2. _____

3. $\sqrt{y+1} = 9$ 3. _____

4. $\sqrt{x-1} - 1 = 7$ 4. _____

5. $\sqrt{y-4} = 5$ 5. _____

6. $\sqrt{5x-4} = 4$ 6. _____

7. $\sqrt{2x+1} = 19$ 7. _____

8. $\sqrt{6x+1} - 11 = 0$ 8. _____

9. $\sqrt{8x+3} = -6$ 9. _____

10. $\sqrt{x} + 4 = 9$ 10. _____

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11. $\sqrt{3x+1} - 3 = 1$

11. _____

12. $(4x+8)^{\frac{1}{2}} = 4$

12. _____

13. $(a-3)^{\frac{1}{2}} + 6 = 7$

13. _____

14. $\sqrt[3]{3x} + 4 = 7$

14. _____

15. $\sqrt[3]{5x+2} = 3$

15. _____

16. $\sqrt[4]{4x+1} = 3$

16. _____

17. $\sqrt{a-3} = a-3$

17. _____

18. $(5x+1)^{\frac{1}{2}} = x+1$

18. _____

19. $x+7 = \sqrt{2x+13}$

19. _____

20. $\sqrt{x+5} = \sqrt{x-3} + 2$

20. _____

Additional Exercises 7.6
Form II
Radical Equations

Solve each radical equation.

1. $\sqrt[3]{x} = 4$ 1. _____

2. $\sqrt{3x+1} = 4$ 2. _____

3. $\sqrt{x} + 8 = 7$ 3. _____

4. $\sqrt{4x+6} = 9$ 4. _____

5. $(3x-6)^{\frac{1}{3}} - 8 = -5$ 5. _____

6. $3\sqrt{4x+5} = 27$ 6. _____

7. $\sqrt{2x-3} + 9 = 14$ 7. _____

8. $\sqrt[3]{2x-5} = 1$ 8. _____

9. $(3x+1)^{\frac{1}{4}} = 2$ 9. _____

10. $\sqrt{2x+7} = 4-x$ 10. _____

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11. $(4x+1)^{\frac{1}{2}} = x-5$

11. _____

12. $\sqrt[3]{4x+9} = \sqrt[3]{3-2x}$

12. _____

13. $\sqrt{3x+1} = x-3$

13. _____

14. $(2x+7)^{\frac{1}{3}} = -1$

14. _____

15. $\sqrt{x^2-15} = 7$

15. _____

16. $\sqrt{6y-9} = \sqrt{3y+3}$

16. _____

17. $4\sqrt{2x-4} = 24$

17. _____

18. $\sqrt{8a-3} = \sqrt{7a+3}$

18. _____

19. $\sqrt{3a+1} = \sqrt{a-4} + 3$

19. _____

20. $\sqrt{2x+5} - \sqrt{x-2} = 3$

20. _____

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Additional Exercises 7.6
Form III
Radical Equations

Solve each radical equation.

1. $\sqrt{2x+4} = 6$ 1. _____

2. $\sqrt{x+7} + 8 = 12$ 2. _____

3. $\sqrt{3x+5} + 4 = 2$ 3. _____

4. $(3x+1)^{\frac{1}{2}} - 4 = 1$ 4. _____

5. $\sqrt[3]{2x-1} = 1$ 5. _____

6. $y - 4 = \sqrt{2y - 8}$ 6. _____

7. $\sqrt{x^2 - 5x + 64} = x + 3$ 7. _____

8. $\sqrt{x^2 - 15} - \sqrt{x + 5} = 0$ 8. _____

9. $(3x - 2)^{\frac{1}{3}} + 2 = 3$ 9. _____

10. $\sqrt{2x^2 - 7} = x$ 10. _____

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11. $(5x - 4)^{\frac{1}{4}} - 4 = -2$ 11. _____

12. $(3x + 4)^{\frac{1}{2}} = (4x - 1)^{\frac{1}{2}}$ 12. _____

13. $\sqrt{2x + 3} - \sqrt{x + 1} = 1$ 13. _____

14. $\sqrt{x + 8} - 2 = \sqrt{x - 4}$ 14. _____

15. $\sqrt{x + 6} + \sqrt{2 - x} = 4$ 15. _____

16. $2 + \sqrt{x - 2} = (2x - 5)^{\frac{1}{2}}$ 16. _____

17. $\sqrt{2x + 5} - \sqrt{x - 1} = \sqrt{x + 2}$ 17. _____

18. $\sqrt{3x + 3} - \sqrt{2x - 3} = \sqrt{3x - 2}$ 18. _____

Solve.

19. The formula $v = \sqrt{2.5r}$ can be used to estimate the maximum safe velocity v , in miles per hour, at which a car can travel along a curved road with a radius of curvature r , in feet. To the nearest whole number, find the radius of curvature if the maximum safe velocity is 20. 19. _____

20. The function $f(x) = 6.75\sqrt{x} + 12$ models the amount, $f(x)$, in billions of dollars of new student loans x years after 2005. According to the model, in what year is the amount loaned expected to reach \$25.5 billion? 20. _____