

**A2 Chapter 6 Equations****Multiple Choice**

Identify the choice that best completes the statement or answers the question.

**Solve the equation.**

- \_\_\_\_\_ 1.  $\sqrt{x+9} + 4 = 7$   
a. 18                      b. 9                      c. 0                      d. -6
- \_\_\_\_\_ 2.  $\sqrt{x+7} + 2 = 8$   
a. -1                      b. 29                      c. 43                      d. 36
- \_\_\_\_\_ 3.  $\sqrt{x-9} - 3 = 2$   
a. 34                      b. 16                      c. 25                      d. 14
- \_\_\_\_\_ 4.  $\sqrt{x+5} + 6 = 8$   
a. 9                      b. -3                      c. -1                      d. 4
- \_\_\_\_\_ 5.  $\sqrt{x-5} + 2 = 7$   
a. 10                      b. 25                      c. 20                      d. 30
- \_\_\_\_\_ 6.  $\sqrt{x-10} - 5 = 4$   
a. 19                      b. 71                      c. 81                      d. 91
- \_\_\_\_\_ 7.  $\sqrt{x-10} - 4 = 3$   
a. 49                      b. 39                      c. 59                      d. 17
- \_\_\_\_\_ 8.  $\sqrt{x+10} - 6 = -2$   
a. -6                      b. 16                      c. 6                      d. 26
- \_\_\_\_\_ 9.  $\sqrt{x+5} - 10 = -4$   
a. 31                      b. 41                      c. 36                      d. 1
- \_\_\_\_\_ 10.  $\sqrt{x-6} - 5 = 2$   
a. 43                      b. 49                      c. 13                      d. 55
- \_\_\_\_\_ 11.  $\sqrt{x-2} - 9 = -4$   
a. 7                      b. 23                      c. 25                      d. 27
- \_\_\_\_\_ 12.  $\sqrt{x-7} - 10 = -3$   
a. 42                      b. 14                      c. 49                      d. 56
- \_\_\_\_\_ 13.  $\sqrt{x+6} + 7 = 10$   
a. 3                      b. 9                      c. -3                      d. 15
- \_\_\_\_\_ 14.  $\sqrt{x-6} - 10 = -5$   
a. 31                      b. 25                      c. 19                      d. 11
- \_\_\_\_\_ 15.  $\sqrt{x-3} - 2 = 5$   
a. 46                      b. 49                      c. 10                      d. 52
- \_\_\_\_\_ 16.  $\sqrt{x-6} - 9 = -3$   
a. 12                      b. 36                      c. 42                      d. 30

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- \_\_\_\_\_ 17.  $\sqrt{x-8} - 4 = -2$   
a. 10                      b. 12                      c. -4                      d. 4
- \_\_\_\_\_ 18.  $\sqrt{x-7} - 10 = -4$   
a. 13                      b. 36                      c. 29                      d. 43
- \_\_\_\_\_ 19.  $\sqrt{x-7} - 4 = 3$   
a. 56                      b. 49                      c. 14                      d. 42
- \_\_\_\_\_ 20.  $\sqrt{x+8} - 5 = 3$   
a. 0                        b. 72                      c. 64                      d. 56
- \_\_\_\_\_ 21.  $(x-5)^{\frac{2}{3}} = 9$   
a. 4                        b. 14                      c. 22; -22                d. 32; -22
- \_\_\_\_\_ 22.  $(x+10)^{\frac{2}{5}} = 4$   
a. 14                      b. 22; -42                c. 42; -42                d. -6
- \_\_\_\_\_ 23.  $(x+5)^{\frac{3}{5}} = 8$   
a. 13                      b. 37                      c. 3                        d. 27
- \_\_\_\_\_ 24.  $(x+7)^{\frac{2}{3}} = 4$   
a. 11                      b. 15; -15                c. -3                      d. 1; -15
- \_\_\_\_\_ 25.  $(x-5)^{\frac{3}{5}} = 8$   
a. 3                        b. 13                      c. 27                      d. 37
- \_\_\_\_\_ 26.  $(x-5)^{\frac{2}{5}} = 4$   
a. 9                        b. -1                      c. 27; -27                d. 37; -27
- \_\_\_\_\_ 27.  $(x-7)^{\frac{2}{3}} = 4$   
a. 1; -1                    b. 15; -1                c. 11                      d. -3
- \_\_\_\_\_ 28.  $(x-3)^{\frac{2}{3}} = 4$   
a. 5; -5                    b. 7                        c. 11; -5                d. 1
- \_\_\_\_\_ 29.  $(x+9)^{\frac{2}{3}} = 4$   
a. 17; -17                b. -5                      c. -1; -17                d. 13
- \_\_\_\_\_ 30.  $(x-7)^{\frac{2}{3}} = 4$   
a. 11                      b. 15; -1                c. -3                      d. 1; -1
- \_\_\_\_\_ 31.  $(x-10)^{\frac{3}{5}} = 8$   
a. 42                      b. 18                      c. 22                      d. -2
- \_\_\_\_\_ 32.  $(x+3)^{\frac{2}{3}} = 4$   
a. 11; -11                b. 5; -11                c. 7                        d. 1
- \_\_\_\_\_ 33.  $(x+2)^{\frac{3}{5}} = 8$   
a. 10                      b. 30                      c. 6                        d. 34

- \_\_\_\_ 34.  $(x - 4)^{\frac{2}{3}} = 9$   
 a. 5                      b. 31; -23                      c. 13                      d. 23; -23
- \_\_\_\_ 35.  $(x + 3)^{\frac{2}{3}} = 9$   
 a. 24; -30                      b. 12                      c. 30; -30                      d. 6
- \_\_\_\_ 36.  $(x - 6)^{\frac{3}{5}} = 8$   
 a. 38                      b. 26                      c. 14                      d. 2
- \_\_\_\_ 37.  $(x + 10)^{\frac{2}{3}} = 9$   
 a. -1                      b. 17; -37                      c. 37; -37                      d. 19
- \_\_\_\_ 38.  $(x + 4)^{\frac{2}{3}} = 9$   
 a. 13                      b. 31; -31                      c. 5                      d. 23; -31
- \_\_\_\_ 39.  $(x + 7)^{\frac{2}{3}} = 9$   
 a. 16                      b. 2                      c. 34; -34                      d. 20; -34
- \_\_\_\_ 40.  $(x - 2)^{\frac{3}{4}} = 8$   
 a. 6                      b. 14                      c. 18                      d. 10

**Solve. Check for extraneous solutions.**

- \_\_\_\_ 41.  $6x = \sqrt{24 + 12x}$   
 a.  $-\frac{2}{3}$                       b. -1                      c. 1 and  $-\frac{2}{3}$                       d. 1
- \_\_\_\_ 42.  $3x = \sqrt{20 - 3x}$   
 a.  $\frac{4}{3}$  and  $-\frac{5}{3}$                       b.  $-\frac{4}{3}$                       c.  $-\frac{5}{3}$                       d.  $\frac{4}{3}$
- \_\_\_\_ 43.  $6x = \sqrt{6 - 6x}$   
 a.  $\frac{1}{3}$  and  $-\frac{1}{2}$                       b.  $-\frac{1}{3}$                       c.  $-\frac{1}{2}$                       d.  $\frac{1}{3}$
- \_\_\_\_ 44.  $2x = \sqrt{20 - 2x}$   
 a. 2                      b.  $-\frac{5}{2}$                       c. -2                      d. 2 and  $-\frac{5}{2}$
- \_\_\_\_ 45.  $4x = \sqrt{6 - 4x}$   
 a.  $-\frac{1}{2}$                       b.  $-\frac{3}{4}$                       c.  $\frac{1}{2}$  and  $-\frac{3}{4}$                       d.  $\frac{1}{2}$
- \_\_\_\_ 46.  $6x = \sqrt{12 - 6x}$   
 a.  $-\frac{1}{2}$                       b.  $\frac{1}{2}$  and  $-\frac{2}{3}$                       c.  $-\frac{2}{3}$                       d.  $\frac{1}{2}$
- \_\_\_\_ 47.  $5x = \sqrt{10 - 15x}$   
 a.  $\frac{2}{5}$  and -1                      b.  $-\frac{2}{5}$                       c.  $\frac{2}{5}$                       d. -1

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- \_\_\_ 48.  $6x = \sqrt{12 + 6x}$   
a.  $\frac{2}{3}$  and  $-\frac{1}{2}$       b.  $\frac{2}{3}$       c.  $-\frac{2}{3}$       d.  $-\frac{1}{2}$
- \_\_\_ 49.  $2x = \sqrt{18 + 6x}$   
a.  $-\frac{3}{2}$       b.  $-3$       c.  $3$  and  $-\frac{3}{2}$       d.  $3$
- \_\_\_ 50.  $2x = \sqrt{18 - 6x}$   
a.  $\frac{3}{2}$       b.  $-\frac{3}{2}$       c.  $-3$       d.  $\frac{3}{2}$  and  $-3$
- \_\_\_ 51.  $6x = \sqrt{15 - 12x}$   
a.  $-\frac{1}{2}$       b.  $\frac{1}{2}$  and  $-\frac{5}{6}$       c.  $\frac{1}{2}$       d.  $-\frac{5}{6}$
- \_\_\_ 52.  $2x = \sqrt{6 + 2x}$   
a.  $-\frac{3}{2}$       b.  $\frac{3}{2}$       c.  $-1$       d.  $\frac{3}{2}$  and  $-1$
- \_\_\_ 53.  $3x = \sqrt{30 + 3x}$   
a.  $2$  and  $-\frac{5}{3}$       b.  $-2$       c.  $-\frac{5}{3}$       d.  $2$
- \_\_\_ 54.  $6x = \sqrt{8 + 12x}$   
a.  $\frac{2}{3}$       b.  $\frac{2}{3}$  and  $-\frac{1}{3}$       c.  $-\frac{1}{3}$       d.  $-\frac{2}{3}$
- \_\_\_ 55.  $6x = \sqrt{20 + 6x}$   
a.  $-\frac{5}{6}$       b.  $-\frac{2}{3}$       c.  $\frac{5}{6}$       d.  $\frac{5}{6}$  and  $-\frac{2}{3}$
- \_\_\_ 56.  $2x = \sqrt{30 + 2x}$   
a.  $3$  and  $-\frac{5}{2}$       b.  $-3$       c.  $3$       d.  $-\frac{5}{2}$
- \_\_\_ 57.  $6x = \sqrt{10 - 18x}$   
a.  $-\frac{5}{6}$       b.  $-\frac{1}{3}$       c.  $\frac{1}{3}$       d.  $\frac{1}{3}$  and  $-\frac{5}{6}$
- \_\_\_ 58.  $3x = \sqrt{12 - 12x}$   
a.  $-2$       b.  $\frac{2}{3}$  and  $-2$       c.  $-\frac{2}{3}$       d.  $\frac{2}{3}$
- \_\_\_ 59.  $2x = \sqrt{12 - 2x}$   
a.  $\frac{3}{2}$       b.  $-2$       c.  $\frac{3}{2}$  and  $-2$       d.  $-\frac{3}{2}$
- \_\_\_ 60.  $4x = \sqrt{18 - 12x}$   
a.  $-\frac{3}{4}$       b.  $\frac{3}{4}$  and  $-\frac{3}{2}$       c.  $-\frac{3}{2}$       d.  $\frac{3}{4}$
- \_\_\_ 61.  $2x = \sqrt{24 + 4x}$   
a.  $-3$       b.  $3$       c.  $3$  and  $-2$       d.  $-2$

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- \_\_\_\_\_ 62.  $(-2x + 6)^{\frac{1}{5}} = (-8 + 10x)^{\frac{1}{5}}$   
a.  $\frac{7}{6}$                       b.  $\frac{2}{3}$                       c.  $-\frac{1}{4}$                       d.  $\frac{6}{7}$
- \_\_\_\_\_ 63.  $(5x - 6)^{\frac{1}{3}} = (7 - 4x)^{\frac{1}{3}}$   
a.  $-1$                       b.  $1$                       c.  $\frac{9}{13}$                       d.  $\frac{13}{9}$
- \_\_\_\_\_ 64.  $(2x + 5)^{\frac{1}{5}} = (-8 + 9x)^{\frac{1}{5}}$   
a.  $\frac{13}{7}$                       b.  $-\frac{3}{11}$                       c.  $\frac{7}{13}$                       d.  $\frac{2}{5}$
- \_\_\_\_\_ 65.  $(3x + 9)^{\frac{1}{3}} = (7 - 6x)^{\frac{1}{3}}$   
a.  $-\frac{16}{3}$                       b.  $-\frac{2}{9}$                       c.  $\frac{15}{4}$                       d.  $-\frac{9}{2}$
- \_\_\_\_\_ 66.  $(-6x - 7)^{\frac{1}{4}} = (2 - 4x)^{\frac{1}{4}}$   
a.  $-\frac{3}{8}$                       b.  $\frac{1}{2}$                       c.  $-\frac{2}{9}$                       d.  $-\frac{9}{2}$
- \_\_\_\_\_ 67.  $(-4x + 2)^{\frac{1}{4}} = (-3 - 10x)^{\frac{1}{4}}$   
a.  $-\frac{5}{6}$                       b.  $\frac{1}{14}$                       c.  $-\frac{6}{5}$                       d.  $12$
- \_\_\_\_\_ 68.  $(2x + 4)^{\frac{1}{4}} = (-10 - 9x)^{\frac{1}{4}}$   
a.  $-\frac{13}{12}$                       b.  $\frac{6}{7}$                       c.  $-\frac{11}{14}$                       d.  $-\frac{14}{11}$
- \_\_\_\_\_ 69.  $(6x + 7)^{\frac{1}{2}} = (8 + 3x)^{\frac{1}{2}}$   
a.  $2$                       b.  $\frac{5}{3}$                       c.  $3$                       d.  $\frac{1}{3}$
- \_\_\_\_\_ 70.  $(4x + 10)^{\frac{1}{3}} = (8 - 3x)^{\frac{1}{3}}$   
a.  $\frac{13}{4}$                       b.  $18$                       c.  $-\frac{2}{7}$                       d.  $-\frac{7}{2}$
- \_\_\_\_\_ 71.  $(-6x + 8)^{\frac{1}{3}} = (-5 - 7x)^{\frac{1}{3}}$   
a.  $-\frac{3}{13}$                       b.  $-13$                       c.  $-\frac{1}{13}$                       d.  $15$
- \_\_\_\_\_ 72.  $(8x + 4)^{\frac{1}{5}} = (6 + 3x)^{\frac{1}{5}}$   
a.  $\frac{2}{5}$                       b.  $\frac{10}{11}$                       c.  $-\frac{1}{2}$                       d.  $\frac{5}{2}$
- \_\_\_\_\_ 73.  $(6x - 8)^{\frac{1}{4}} = (9 - 5x)^{\frac{1}{4}}$   
a.  $-1$                       b.  $\frac{11}{17}$                       c.  $1$                       d.  $\frac{17}{11}$

- \_\_\_\_ 74.  $(-5x + 6)^{\frac{1}{2}} = (-9 - 8x)^{\frac{1}{2}}$   
 a.  $-5$                       b.  $\frac{3}{13}$                       c.  $-\frac{1}{5}$                       d.  $-\frac{7}{2}$
- \_\_\_\_ 75.  $(-3x + 2)^{\frac{1}{4}} = (6 + 4x)^{\frac{1}{4}}$   
 a.  $-\frac{2}{9}$                       b.  $-\frac{4}{7}$                       c.  $-\frac{7}{4}$                       d.  $8$
- \_\_\_\_ 76.  $(-9x + 4)^{\frac{1}{3}} = (7 + 3x)^{\frac{1}{3}}$   
 a.  $-\frac{11}{6}$                       b.  $-\frac{1}{4}$                       c.  $-4$                       d.  $\frac{1}{16}$
- \_\_\_\_ 77.  $(-8x + 3)^{\frac{1}{4}} = (7 - 4x)^{\frac{1}{4}}$   
 a.  $-1$                       b.  $-\frac{5}{6}$                       c.  $\frac{7}{15}$                       d.  $-1$
- \_\_\_\_ 78.  $(-8x + 9)^{\frac{1}{2}} = (6 - 4x)^{\frac{1}{2}}$   
 a.  $\frac{4}{3}$                       b.  $-\frac{5}{4}$                       c.  $\frac{13}{14}$                       d.  $\frac{3}{4}$
- \_\_\_\_ 79.  $(9x - 7)^{\frac{1}{4}} = (5 - 6x)^{\frac{1}{4}}$   
 a.  $-\frac{2}{3}$                       b.  $\frac{1}{4}$                       c.  $\frac{4}{5}$                       d.  $\frac{5}{4}$
- \_\_\_\_ 80.  $(-4x + 3)^{\frac{1}{4}} = (-9 - 7x)^{\frac{1}{4}}$   
 a.  $\frac{6}{11}$                       b.  $-\frac{1}{4}$                       c.  $-4$                       d.  $-2$
- \_\_\_\_ 81.  $(10x - 4)^{\frac{1}{2}} = (8 + 7x)^{\frac{1}{2}}$   
 a.  $\frac{4}{17}$                       b.  $\frac{1}{4}$                       c.  $\frac{11}{2}$                       d.  $4$
- \_\_\_\_ 82.  $(-5x - 2)^{\frac{1}{4}} = (-7 - 6x)^{\frac{1}{4}}$   
 a.  $-\frac{1}{5}$                       b.  $-2$                       c.  $\frac{9}{11}$                       d.  $-5$
- \_\_\_\_ 83.  $(9x + 7)^{\frac{1}{4}} = (-5 - 8x)^{\frac{1}{4}}$   
 a.  $-\frac{15}{14}$                       b.  $2$                       c.  $-\frac{12}{17}$                       d.  $-\frac{17}{12}$
- \_\_\_\_ 84.  $(-5x + 8)^{\frac{1}{4}} = (3 - 6x)^{\frac{1}{4}}$   
 a.  $\frac{7}{4}$                       b.  $-5$                       c.  $-1$                       d.  $-\frac{1}{5}$
- \_\_\_\_ 85.  $(9x - 10)^{\frac{1}{3}} = (-6 + 7x)^{\frac{1}{3}}$   
 a.  $\frac{1}{2}$                       b.  $2$                       c.  $\frac{17}{15}$                       d.  $-1$

**A2 Chapter 6 Equations  
Answer Section**

**MULTIPLE CHOICE**

1. C
2. B
3. A
4. C
5. D
6. D
7. C
8. C
9. A
10. D
11. D
12. D
13. A
14. A
15. D
16. C
17. B
18. D
19. A
20. D
21. D
22. B
23. D
24. D
25. D
26. D
27. B
28. C
29. C
30. B
31. A
32. B
33. B
34. B
35. A
36. A
37. B
38. D
39. D

- 40. C
- 41. D
- 42. D
- 43. D
- 44. A
- 45. D
- 46. D
- 47. C
- 48. B
- 49. D
- 50. A
- 51. C
- 52. B
- 53. D
- 54. A
- 55. C
- 56. C
- 57. C
- 58. D
- 59. A
- 60. D
- 61. B
- 62. A
- 63. D
- 64. A
- 65. B
- 66. D
- 67. A
- 68. D
- 69. D
- 70. C
- 71. B
- 72. A
- 73. D
- 74. A
- 75. B
- 76. B
- 77. D
- 78. D
- 79. C
- 80. C
- 81. D
- 82. D
- 83. C
- 84. B



85. B