

Answers for 7.6

For use with pages 519–522

7.6 Skill Practice

1. exponential
2. *Sample answer:* When you have a factor to solve.
3. 8 4. 2 5. $\frac{7}{12}$
6. $\frac{19}{6}$ 7. $-\frac{5}{7}$ 8. $\frac{11}{3}$
9. $-\frac{5}{3}$ 10. $\frac{4}{5}$ 11. -2
12. about 1.441 13. about -1.609
14. about 0.495 15. about 0.292
16. about 0.213 17. about -0.723
18. about 0.233 19. about 0.650
20. about -2.087
21. about -0.378
22. about 35.850
23. about -0.203
24. 9 25. 6 26. $\frac{9}{2}$
27. no solution 28. $\frac{8}{3}$
29. $\frac{31}{15}$ 30. no solution
31. $\frac{1}{3}$ 32. $\frac{1}{4}$
33. e^7 or about 1096.633
34. $\frac{15,625}{12}$ 35. about 35.601

36. 68 37. 4 38. $-8, -2$
39. about 0.729
40. about -90.017
41. about 2.720
42. 9
43. about 10.243
44. A
45. *Sample answer:* The log was not simplified correctly, $x \log_3 6 \neq 2x$; $\log_3 6 \approx 1.631$, $x = 1.585$.
46. *Sample answer:* When converting the log to exponential form, 3 should have been used instead of e ; $3^{\log_3 10x} = 3^5$, $10x = 243$, $x = 24.3$.
47. *Sample answer:* $3^x = 81$, $\log_5(x + 4) = 0$
48. about 5.374 49. about 2.879
50. no solution 51. 6
52. 2, 3 53. 1

7.6 Problem Solving

54. about 30 min
55. about 24°F
56. a. 40 yr b. 38.75 yr
c. 38.38 yr

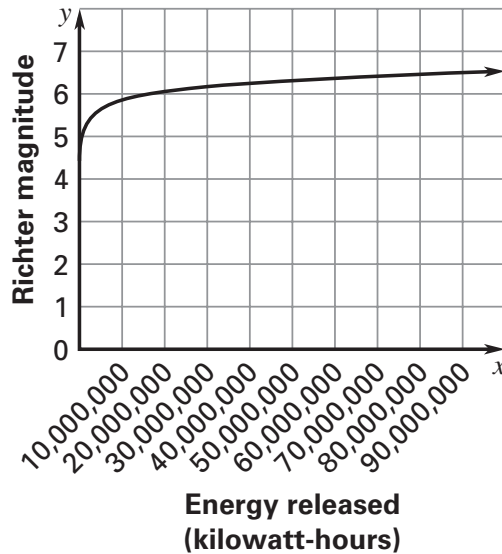
Answers for 7.6 *continued*

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57. about 6967 yr

58. C

59. a.



Japan: about 127,000,000 kilowatt-hours, Greece: about 11,500,000 kilowatt-hours, USA: about 23,500 kilowatt-hours

b. Japan:

$$6.6 = 0.67 \log(0.37E) + 1.46,$$

126,893,702 kilowatt-hours;

Greece:

$$5.9 = 0.67 \log(0.37E) + 1.46,$$

11,446,269 kilowatt-hours;

USA:

$$4.1 = 0.67 \log(0.37E) + 1.46,$$

23,556 kilowatt-hours

60. a. about 2.8 cm

b. about 0.38 cm

c. about 0.03 cm

d. The lead apron does not have to be as thick as aluminum or copper to result in the same intensity.

61. about 5.9 wk

7.6 Mixed Review

62. (4, 5)

63. $\left(1\frac{5}{27}, -1\frac{2}{27}\right)$

64. (-6, 0)

65. 2 or 0 positive real zeros, 1 negative real zero, 2 or 0 imaginary zeros

66. 3 or 1 positive real zeros, 1 negative real zero, 2 or 0 imaginary zeros

67. 2 or 0 positive real zeros, 3 or 1 negative real zeros, 4 or 2 or 0 imaginary zeros

68. 3 or 1 positive real zeros, 2 or 0 negative real zeros, 6 or 4 or 2 or 0 imaginary zeros

69. $y = -5x^2 + 24x$

70. $y = x^3 - 2x^2 + x$