

Answers for 6.6

For use with pages 456–464

6.6 Skill Practice

- extraneous
- Move a square root to the other side of the equal sign before squaring each side.
- 7
- 18
- 1
- $\frac{2}{9}$
- 6
- $\frac{2}{5}$
- 29
- $12\frac{1}{4}$
- $-70\frac{1}{2}$
- C
- 343
- 24
- 18
- 32
- 8
- $-1\frac{7}{32}$
- 11
- $-16\frac{1}{2}$
- 37
- Sample answer:* $\sqrt[3]{9x - 37} = -4$;
I substituted values in for a and b and -3 in for x and then solved for c .
- ± 64
- 4
- ± 32
- ± 8
- 40
- 32
- 108
- $16\frac{3}{5}$
- $-35\frac{2}{3}, 7$
- 2 should be subtracted from both sides first; $(\sqrt[3]{x})^3 = 2^3, x = 8$.
- Both sides must be raised to the power; $[(x + 7)^{1/2}]^2 = 5^2$,
 $x + 7 = 25, x = 18$.

- 12
- 25
- 25
- 3, 8
- 14
- $-2\frac{1}{10}$
- 4
- $\frac{1}{2}$
- $0, \frac{1}{2}$
- A
- It is not possible to take the square root of a number and get a negative answer.
- 3
- 5
- 4
- $-11\frac{1}{4}$
- $\frac{1}{4}$
- 3
- 2, 2
- 1, 2
- (4, 25)
- (8, 18)
- Sample answer:* $\sqrt{4x - 3} = -x$

6.6 Problem Solving

- about 11.5 m
- about 391 min
- about 0.15 in.
- Sample answer:* The elephant with a shoulder height of 250 centimeters is about 20 years older than the elephant with a shoulder height of 150 centimeters.
- about 2.6 ft, about 5 ft
 - about 10.5 ft, about 20 ft
 - No; the height is quadrupled.

Answers for 6.6 *continued*
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- 61. a.** about 0.16 mi/h
b. about 80 mi/h
c. $0.16 \leq s < 80$

62. about 4.9

6.6 Mixed Review

63. 1024; product of powers prop.

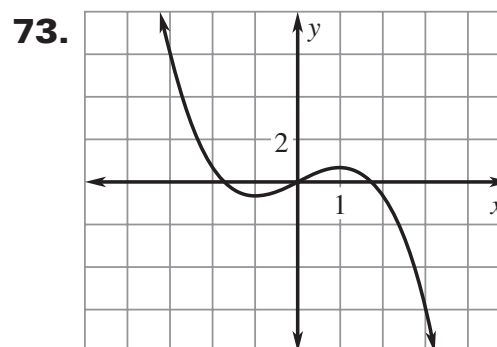
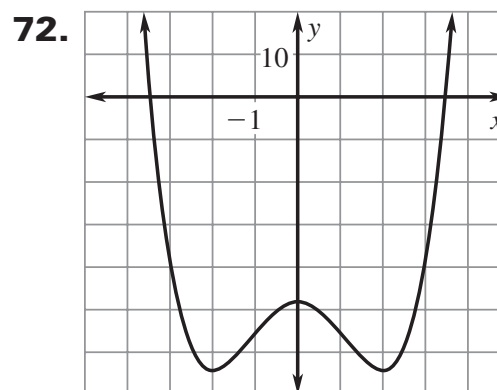
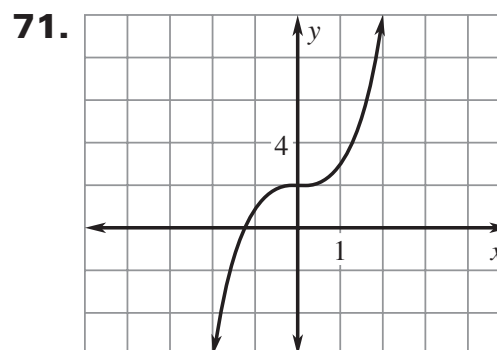
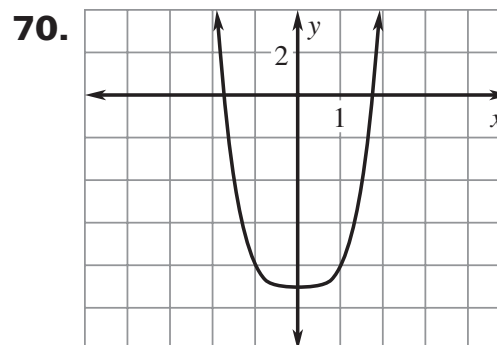
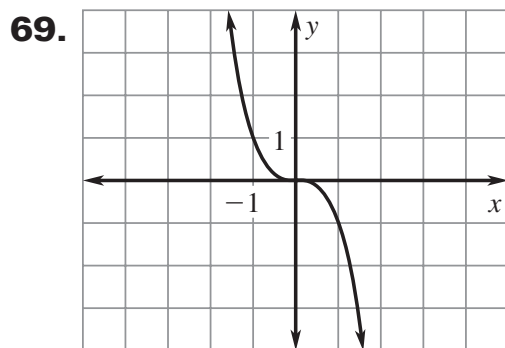
64. $\frac{1}{729}$; power of a power prop.,
negative exponent prop.

65. $-\frac{1}{125}$; product of powers prop.,
negative exponent prop.

66. 1000; power of a power prop.

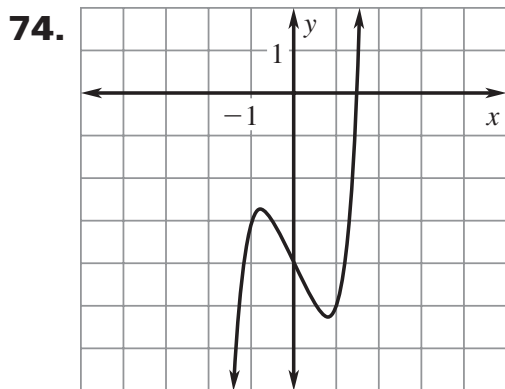
67. $\frac{1}{8}$; product of powers prop.,
negative exponent prop.

68. 1; product of powers property,
zero exponent prop.



Answers for 6.6 *continued*

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75. 64 76. 81 77. -4

78. $\frac{1}{32}$ 79. $\frac{1}{125}$ 80. 0

6.4–6.6 Mixed Review of Problem Solving

1. a. $R = 1.4C$

b. $C = \frac{R}{1.4}$

c. \$42.86

2. 7; *Sample answer:* Find the point on the graph where the y-coordinate is 4 and determine the corresponding x-coordinate.

3. *Sample answer:* $\sqrt{x + 21} = 4$

4. a. $d = \frac{k}{0.134}$

b. \$186.57

c. The function gives U.S. dollars as a function of kronos.

5. *Sample answer:* $y = \sqrt{x + 14}$; yes; two points do not determine a unique square root function.

6. *Sample answer:* $y = \sqrt{x - 4}$;
 $y = \sqrt{x} - 2$

7. a. $h = \frac{v^2}{64}$

b. *Sample answer:* What is the maximum height of an object launched with an initial velocity of 80 feet per second?

$$h = \frac{80^2}{64} = \frac{6400}{64} = 100 \text{ ft}$$

8. about 86.6 ft;

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1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

9. $A(r(t)) = 0.36\pi t^2$; about 4.52 ft²; the area of the outer ripple 2 seconds after the pebble hits the water.