Answers for Resources by Chapter

14.2 Start Thinking!

For use before Activity 14.2

 $\sqrt{169} = 13$; *Sample answer*: Square roots are positive unless there is a negative in front of the radical sign.

14.2 Warm Up

For use before Activity 14.2

1. 6	2. -8	3. $\frac{7}{9}$
4. –15	5. 11	6. $\frac{12}{13}$

14.2 Start Thinking!

For use before Lesson 14.2

Sample answer: To find the square root of a number, you are determining what number when multiplied by itself, equals the given number. For example, $\sqrt{4} = 2$. To find the cube root of a number, you are determining what number when multiplied by itself, and multiplied by itself again, equals a given number. For example, $\sqrt[3]{8} = 2$.

14.2 Warm Up

For use before Lesson 14.2

1. 40 **2.**
$$\frac{1}{6}$$

14.2 Practice A

1.	s = 30 cm	n 2. <i>s</i> =	$\frac{1}{2}$ in. 3	. 5	
4.	-1	5. -2	6	. –10	
7.	20	8. 8	9.	$-\frac{1}{4}$	
10.	0.1		11. $-\sqrt[3]{27}$	> -4	
12.	$\sqrt[3]{64} > \sqrt{64}$	/16	13. 6π ≈ 1	8.8 in.	
14.	$8\pi \approx 25.1$	l m	15. cube B;	1 ft	
14.	14.2 Practice B				
1.	7	2. -11	3. -20	4. 15	
5.	$\frac{1}{4}$	6. $-\frac{5}{3}$	7. 138	8. $2\frac{17}{27}$	
9.	-976	10. 168	11.	$-\frac{25}{2}$	
12.	a. 12 ft k	b. 864 ft ²	c. 144 ft ²		

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13. >	14. >
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15. Sample answer: 8 and -8; 27 and -27

16. 3 m **17.** x = 2 **18.** x = 1

14.2 Enrichment and Extension

1.				
r	n	$x = r^n$	$\sqrt[n]{x}$	Check
1	7	1	1	$1 \bullet 1 = 1$
2	6	64	2	$2 \bullet 2 \bullet 2 \bullet 2 \bullet 2 \bullet 2 \bullet 2 = 64$
3	5	243	3	$3 \bullet 3 \bullet 3 \bullet 3 \bullet 3 \bullet 3 = 243$
4	4	256	4	$4 \bullet 4 \bullet 4 \bullet 4 = 256$
2.	2	3.	3	4. 5 5. 3

- **6.** 3; 27,000 is the least multiple of 9000 that is a perfect cube.
- **7.** 6; 512 is the greatest factor of 3072 that is a perfect cube.

14.2 Puzzle Time

COAT OF PAINT

14.3 Start Thinking!

For use before Activity 14.3

right triangle; yes, any lengths *a*, *b*, and *c* such that $a^2 + b^2 = c^2$

14.3 Warm Up For use before Activity 14.3

1. 1.2	2. ±30	3. $\frac{2}{3}$
4. -21	5. ±22	6. -50

14.3 Start Thinking!

For use before Lesson 14.3

Sample answer: In a gymnastics floor routine, the gymnasts must stay within a 12-meter-by-12-meter square. Often they perform tumbling passes in which they start in one corner of the square and end up in the opposite corner. You can use the Pythagorean Theorem to find how far they traveled from one corner to the other. Also, in baseball, the bases form a square with 90-foot sides. You can use the Pythagorean Theorem to find how far the catcher must throw the ball to throw out a runner at second base.

Answers for Resources by Chapter

14.3 Warm Up

For use before Lesson 14.3

1.	c =	10 cm	2.	с	=	13	in
3.	<i>c</i> =	6 m	4.	с	=	17	ft

14.3 Practice A

- **2.** b = 12 cm **3.** a = 2 m**1.** c = 10 ft
- **4.** b = 20 yd **5.** 6 in.
- **6.** x = 29 yd7. x = 6.5 cm
- **8.** no; The other leg would be 0 meters long, which is impossible.

9. x = 7

14.3 Practice B

1. $c = 37 \text{ mm}$	2. $a = 3$ ft
3. $b = 2$ in.	4. $a = 5 \text{ cm}$
5. 26 in.	6. 9 in.
7. $x = 6 \text{ cm}$	8. 8 fewer blocks

14.3 Enrichment and Extension

1. 3248 mi	2. 1624 mi
3. 615, 574, 435	4. 249,380,384,400
5. 499,380 mi ²	6. 360 m ²

14.3 Puzzle Time

STOP HOUNDING ME

14.4 Start Thinking!

For use before Activity 14.4

Sample answer: π , some square roots, like $\sqrt{2}$ and $\sqrt{3}$

14.4 Warm Up

For use before Activity 14.4				
1. 50	2. 26	3. 34		
4. 41	5. 90	6. 6.5		

14.4 Start Thinking!

For use before L	For use before Lesson 14.4				
Sample answer: First find the area, 93.5 in. ² . Ask yourself, "What number times itself is 93.5?" Because $9^2 = 81$ and $10^2 = 100$, you know that the number					
must be between 9 and 10. Try squaring values between 9 and 10 to find the number that produces the value closest to 93.5. A square with sides of about 9.7 inches has the same area as an 8.5-inch-by-11-inch sheet of paper.					
14.4 Warm U For use before I	p Lesson 14.4				
1. yes	2. no	3.	no		
4. yes	5. yes	6.	no		
14.4 Practice	A				
1. yes		2. no			
3. irrational	4. rational	5. rational	6. rational		
7. irrational; 7 irrational.	The area is 4	π square feet	and π is		
8. a. 6 b. 5	.7	9. a. 25 b	. 25.1		
10. a. −3 b.	10. a. -3 b. -2.8 11. a. 2 b. 1.9				
12. 18 ft					
13. $\sqrt{70}$; 8 =	$\sqrt{64} < \sqrt{7}$	70			
14. 3; A positive number is greater than a negative number.					
15. $16\frac{1}{4}$; $\sqrt{210} < \sqrt{225} = 15$					
16. $\sqrt{\frac{4}{25}}$; $\sqrt{\frac{4}{25}} = \frac{2}{5} = \frac{4}{10}$					
17. $4 < a < 9$; Sample answer: $a = 6$.					
18. yes; $\sqrt{\frac{1}{9}} = \frac{1}{3}$					
19. no; 5 is not a perfect square.					

20. yes; $\sqrt{\frac{2}{18}} = \sqrt{\frac{1}{9}} = \frac{1}{3}$