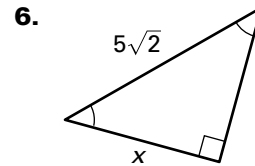
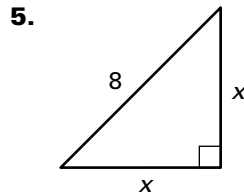
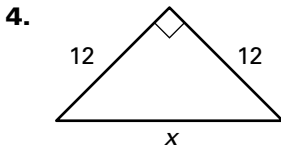
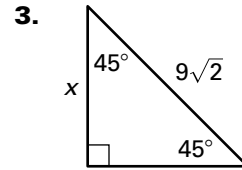
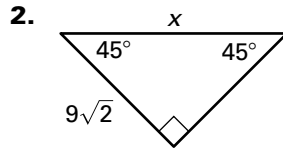
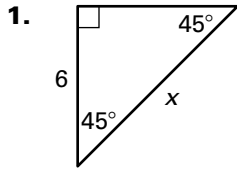
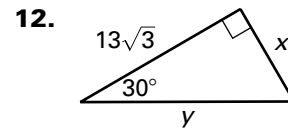
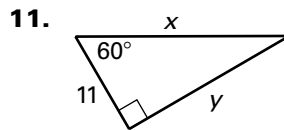
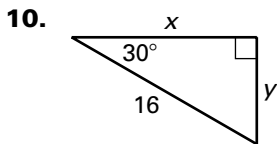
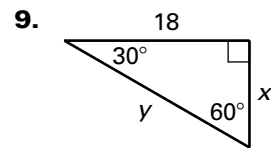
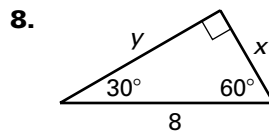
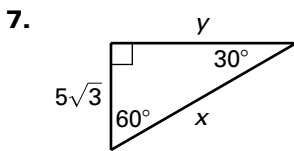


LESSON 7.4 **Practice B**
For use with pages 475–482

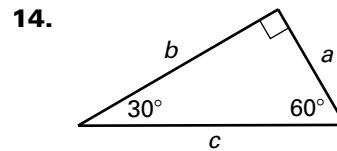
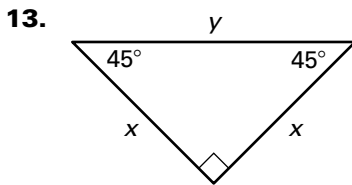
Find the value of x . Write your answer in simplest radical form.



Find the value of each variable. Write your answers in simplest radical form.



Complete the table.



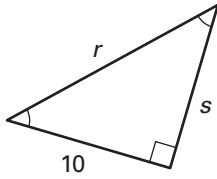
x	5		$\sqrt{2}$	9	
y		$4\sqrt{2}$			24

a	9			11	
b		9	$5\sqrt{3}$		
c					16

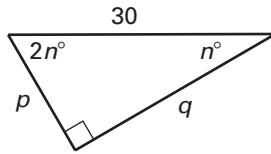
LESSON 7.4 Practice B *continued*
For use with pages 475–482

Find the value of each variable. Write your answers in simplest radical form.

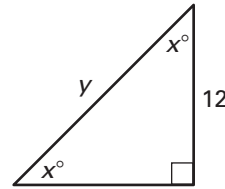
15.



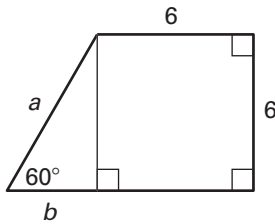
16.



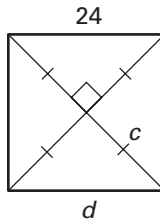
17.



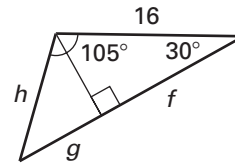
18.



19.



20.



The side lengths of a triangle are given. Determine whether it is a 45°-45°-90° triangle, a 30°-60°-90° triangle, or neither.

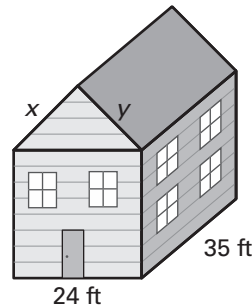
21. 5, 10, $5\sqrt{3}$

22. 7, 7, $7\sqrt{3}$

23. 6, 6, $6\sqrt{2}$

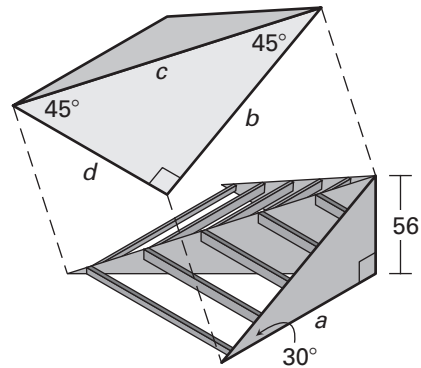
24. Roofing You are replacing the roof on the house shown, and you want to know the total area of the roof. The roof has a 1-1 pitch on both sides, which means that it slopes upward at a rate of 1 vertical unit for each 1 horizontal unit.

- a. Find the values of x and y in the diagram.
- b. Find the total area of the roof to the nearest square foot.



25. Skateboard Ramp You are using wood to build a pyramid-shaped skateboard ramp. You want each ramp surface to incline at an angle of 30° and the maximum height to be 56 centimeters as shown.

- a. Use the relationships shown in the diagram to determine the lengths a , b , c , and d to the nearest centimeter.
- b. Suppose you want to build a second pyramid ramp with a 45° angle of incline and a maximum height of 56 inches. You can use the diagram shown by simply changing the 30° angle to 45° . Determine the lengths a , b , c , and d to the nearest centimeter for this ramp.



Lesson 7.3, continued

13. $\frac{c}{b} = \frac{b}{y}$, solving for y you get $y = \frac{b^2}{c}$.

$\frac{c}{a} = \frac{a}{x}$, solving for x you get $x = \frac{a^2}{c}$.

$x + y = \frac{a^2}{c} + \frac{b^2}{c} = c$

Solving for c , $c^2 = a^2 + b^2$.

Lesson 7.4**Practice Level A**

1. $4\sqrt{2}$ 2. $6\sqrt{2}$ 3. 3 4. $5\sqrt{2}$ 5. $\sqrt{2}$ 6. 9

7. $x = 4, y = 2\sqrt{3}$ 8. $x = 3, y = 3\sqrt{3}$

9. $x = 1, y = 2$ 10. $x = 5\sqrt{3}, y = 5$

11. $x = 14, y = 7\sqrt{3}$ 12. $x = 6, y = 12$

13.	x	2	1	4	3	7
	y	$2\sqrt{2}$	$\sqrt{2}$	$4\sqrt{2}$	$3\sqrt{2}$	$7\sqrt{2}$

14.	a	5	2	4	6	11
	b	$5\sqrt{3}$	$2\sqrt{3}$	$4\sqrt{3}$	$6\sqrt{3}$	$11\sqrt{3}$
	c	10	4	8	12	22

15. $x = 10\sqrt{2}, y = 10$ 16. $p = 24, q = 12\sqrt{3}$

17. $m = 8, n = 8\sqrt{3}$ 18. $x = \frac{15\sqrt{2}}{2}, y = \frac{15\sqrt{2}}{2}$

19. $p = 8, q = 4$ 20. $m = \frac{5\sqrt{3}}{3}, n = \frac{10\sqrt{3}}{3}$

21. D 22. 12 ft 23. a. 127 ft 3 in.

b. 127 ft 3 in. c. No; The midpoint is at 63 ft 8 in.

Practice Level B

1. $6\sqrt{2}$ 2. 18 3. 9 4. $12\sqrt{2}$ 5. $4\sqrt{2}$ 6. 5

7. $x = 10\sqrt{3}, y = 15$ 8. $x = 4, y = 4\sqrt{3}$

9. $x = 6\sqrt{3}, y = 12\sqrt{3}$ 10. $x = 8\sqrt{3}, y = 8$

11. $x = 22, y = 11\sqrt{3}$ 12. $x = 13, y = 26$

13.	x	5	4	$\sqrt{2}$	9	$12\sqrt{2}$
	y	$5\sqrt{2}$	$4\sqrt{2}$	2	$9\sqrt{2}$	24

14.	a	9	$3\sqrt{3}$	5	11	8
	b	$9\sqrt{3}$	9	$5\sqrt{3}$	$11\sqrt{3}$	$8\sqrt{3}$
	c	18	$6\sqrt{3}$	10	22	16

15. $r = 10\sqrt{2}, s = 10$ 16. $n = 30, p = 15, q = 15\sqrt{3}$ 17. $x = 45, y = 12\sqrt{2}$

18. $a = 4\sqrt{3}, b = 2\sqrt{3}$ 19. $c = 12\sqrt{2}, d = 24$

20. $f = 8\sqrt{3}, g = 8, h = 8\sqrt{2}$ 21. $30^\circ-60^\circ-90^\circ$

22. neither 23. $45^\circ-45^\circ-90^\circ$

24. a. $x = y = 12\sqrt{2}$ ft b. 1188 ft²

25. a. $a \approx 97$ cm, $b = d = 112$ cm, $c \approx 158$ cm b. $a = 56$ cm, $b = d \approx 79$ cm, $c = 112$ cm

Practice Level C

1. $x = 8\sqrt{3}, y = 12$ 2. $x = 7, y = 7$

3. $x = \frac{15}{2}, y = \frac{5\sqrt{3}}{2}$ 4. $x = \frac{15}{2}, y = \frac{15\sqrt{3}}{2}$

5. $x = 5\sqrt{3}, y = 10$ 6. $x = 14, y = 14\sqrt{2}$

7. $x = 24\sqrt{3}, y = 36$ 8. $x = 9\sqrt{2}, y = 9$

9. $x = \frac{16\sqrt{3}}{3}, y = \frac{32\sqrt{3}}{3}$ 10. $x = 12, y = 8\sqrt{3}$

11. $x = 9\sqrt{2}, y = 9$ 12. $x = \frac{7\sqrt{3}}{3}, y = \frac{14\sqrt{3}}{3}$

13. B 14. 41.6 cm 15. 72 in.² 16. 12.6 ft

17. 13.0 m 18. 6.5 mi 19. 5600.3 ft

20. 5600.3 ft 21. more 22. 52.0 ft 23. 39.0 ft

24. 77.9 ft

Review for Mastery

1. 9 2. 30 3. $25\sqrt{2}$ 4. $12\sqrt{3}$ 5. 26 6. 21

7. 10 8. 62

**Problem Solving Workshop:
Mixed Problem Solving**

1. a. 180 ft b. 15 c. \$270



b. no; obtuse 3. about 10.4 mi; Find the distance each person traveled in 1 hour 45 minutes. Since Peter walks north and Denise walks east, their distances are the two legs of a right triangle. Use the Pythagorean Theorem to find the distance between them. 4. 29 paces

5. a. Yes; The diagonal of the room is about 9.8 feet, so the lumber can fit diagonally in the trailer. b. No; The diagonal of the trailer is about 17.5 feet. Since this is the longest distance in the room, a 20 foot pipe cannot fit in the room.