

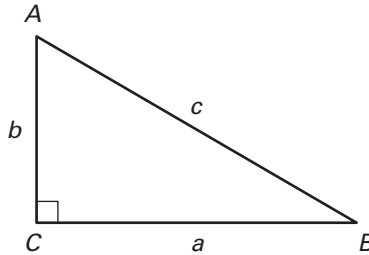
LESSON
7.1

Practice B

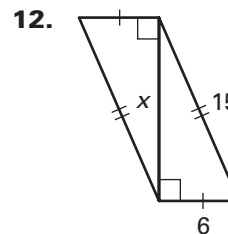
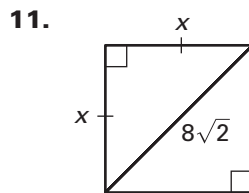
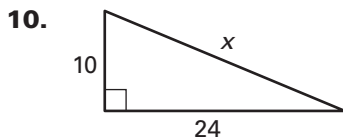
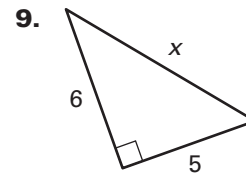
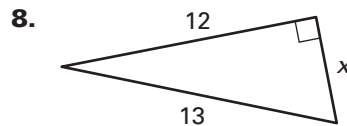
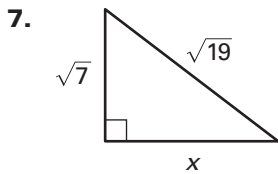
For use with pages 450–457

Use $\triangle ABC$ to determine if the equation is *true* or *false*.

1. $b^2 + a^2 = c^2$
2. $c^2 - a^2 = b^2$
3. $b^2 - c^2 = a^2$
4. $c^2 = a^2 - b^2$
5. $c^2 = b^2 + a^2$
6. $a^2 = c^2 - b^2$



Find the unknown side length. Simplify answers that are radicals. Tell whether the side lengths form a Pythagorean triple. Check that your answer is reasonable.



The given lengths are two sides of a right triangle. All three side lengths of the triangle are integers and together form a Pythagorean triple. Find the length of the third side and tell whether it is a leg or the hypotenuse.

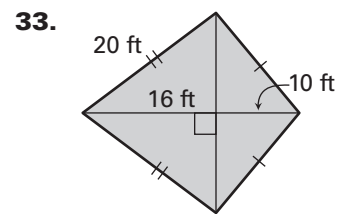
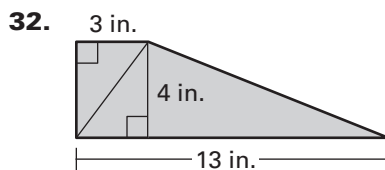
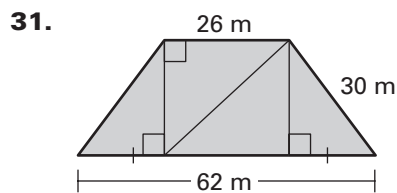
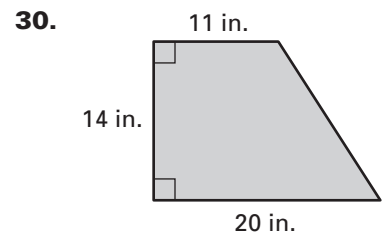
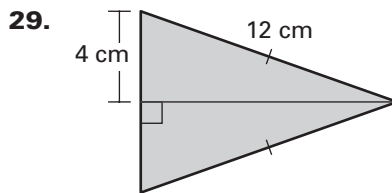
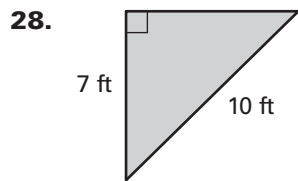
- | | | |
|---------------|---------------|---------------|
| 13. 40 and 41 | 14. 12 and 35 | 15. 63 and 65 |
| 16. 28 and 45 | 17. 56 and 65 | 18. 20 and 29 |
| 19. 80 and 89 | 20. 48 and 55 | 21. 65 and 72 |

Find the area of a right triangle with given leg l and hypotenuse h . Round decimal answers to the nearest tenth.

- | | | |
|-----------------------------|--------------------------------|------------------------------|
| 22. $l = 8$ m, $h = 16$ m | 23. $l = 9$ yd, $h = 12$ yd | 24. $l = 3.5$ ft, $h = 9$ ft |
| 25. $l = 9$ mi, $h = 10$ mi | 26. $l = 21$ in., $h = 29$ in. | 27. $l = 13$ cm, $h = 17$ cm |

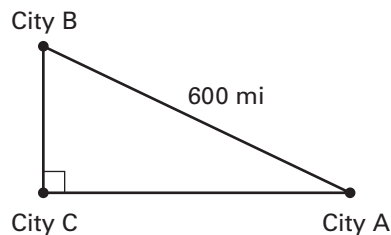
LESSON 7.1 **Practice B** *continued*
For use with pages 450–457

Find the area of the figure. Round decimal answers to the nearest tenth.



34. Softball In slow-pitch softball, the distance of the paths between each pair of consecutive bases is 65 feet and the paths form right angles. Find the distance the catcher must throw a softball from 3 feet behind home plate to second base.

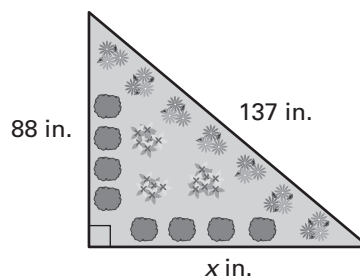
35. Flight Distance A small commuter airline flies to three cities whose locations form the vertices of a right triangle. The total flight distance (from city A to city B to city C and back to city A) is 1400 miles. It is 600 miles between the two cities that are furthest apart. Find the other two distances between cities.



In Exercises 36–38, use the following information.

Garden You have a garden that is in the shape of a right triangle with the dimensions shown.

- 36.** Find the perimeter of the garden.
- 37.** You are going to plant a post every 15 inches around the garden's perimeter. How many posts do you need?
- 38.** You plan to attach fencing to the posts to enclose the garden. If each post costs \$1.25 and each foot of fencing costs \$.70, how much will it cost to enclose the garden?
Explain.



Answers

Lesson 7.1

Practice Level A

1. 10 2. 39 3. 25 4. $3\sqrt{5}$ 5. 34 6. $\sqrt{97}$
 7. 12 8. 15 9. 14 10. 48 in.^2 11. 1080 m^2
 12. 1512 ft^2 13. B 14. 50; hypotenuse
 15. 39; hypotenuse 16. 240; leg 17. 24; leg
 18. 25; hypotenuse 19. 28; leg 20. 54 cm^2
 21. 109.1 ft^2 22. 336 in.^2 23. 270 mi^2
 24. 723.1 in.^2 25. 540 m^2 26. D
 27. $16\sqrt{5} \text{ in.}^2$ 28. $\frac{25\sqrt{3}}{2} \text{ m}^2$ 29. 96 ft^2
 30. 19.6 ft 31. 1680 ft 32. 2.70 33. \$13,500

Practice Level B

1. true 2. true 3. false 4. false 5. true
 6. true 7. $2\sqrt{3}$; no 8. 5; yes 9. $\sqrt{61}$; no
 10. 26; yes 11. 8; no 12. $3\sqrt{21}$; no 13. 9; leg
 14. 37; hypotenuse 15. 16; leg
 16. 53; hypotenuse 17. 33; leg 18. 21; leg
 19. 39; leg 20. 73; hypotenuse
 21. 97; hypotenuse 22. 55.4 m^2 23. 35.7 yd^2
 24. 14.5 ft^2 25. 19.6 mi^2 26. 210 in.^2
 27. 71.2 cm^2 28. 25 ft^2 29. 45.3 cm^2
 30. 217 in.^2 31. 1056 m^2 32. 32 in.^2
 33. 312 ft^2 34. about 95 ft
 35. $400 + 100\sqrt{2} \approx 541.4 \text{ mi}$,
 $400 - 100\sqrt{2} \approx 258.6 \text{ mi}$ 36. 330 in.
 37. 22 posts 38. \$46.75; There are 22 posts, so
 buying 22 posts costs $\$1.25(22) = \27.50 . The
 perimeter of the garden is 330 inches, or 27.5 feet,
 so the fencing costs $\$.70(27.5) = \19.25 . The
 combined cost is $\$27.50 + \$19.25 = \$46.75$.

Practice Level C

1. 51 2. $5\sqrt{13}$ 3. $4\sqrt{73}$ 4. $\sqrt{301}$ 5. $18\sqrt{2}$
 6. $6\sqrt{13}$ 7. $7\sqrt{51} \text{ in.}^2$ 8. $96\sqrt{85} \text{ m}^2$
 9. $\frac{375\sqrt{51}}{4} \text{ ft}^2$ 10. B 11. 40; hypotenuse
 12. 51; hypotenuse 13. 75; leg
 14. 175; hypotenuse 15. 30; leg 16. 135; leg
 17. 90.1 cm^2 18. 155.8 ft^2 19. 155.0 in.^2
 20. 116.6 mi^2 21. 238.1 in.^2 22. 779.4 m^2
 23. C 24. $\frac{7\sqrt{51}}{2} \text{ in.}^2$ 25. $48\sqrt{10} \text{ m}^2$
 26. $352\sqrt{3} \text{ ft}^2$ 27. $8\sqrt{2}$ 28. $2\sqrt{22}$

29. $2\sqrt{127}$ 30. 35 in. 31. 400 ft and 750 ft
 32. 571.9 ft 33. 0.29 34. 48

Review for Mastery

1. leg; 30 2. hypotenuse; $3\sqrt{13}$
 3. hypotenuse; 52 4. leg; $20\sqrt{6}$ 5. leg; $5\sqrt{3}$
 6. hypotenuse; 39 7. 1452 yd^2 8. 540 mi^2
 9. 5, 12, 13; 130 cm 10. 7, 24, 25; 96 in.

Challenge Practice

1. 36.2 in. 2. a. $m = 2, n = 3$, or $m = 3, n = 2$
 b. $m^2 - n^2$ and $2mn$ c. Answers will vary.
 d. 3, 4, 5; 7, 24, 25; 9, 40, 41 3. 44 beads
 4. a. $9nx$

b.

x	Triangle	Square
$x = 1$	27	36
$x = 2$	54	72
$x = 3$	81	108
$x = 4$	108	144
$x = 5$	135	180
$x = 6$	162	216
$x = 7$	189	252
$x = 8$	216	288
$x = 9$	243	324
$x = 10$	270	360

x	Pentagon	Hexagon
$x = 1$	45	54
$x = 2$	90	108
$x = 3$	135	162
$x = 4$	180	216
$x = 5$	225	270
$x = 6$	270	324
$x = 7$	315	378
$x = 8$	360	432
$x = 9$	405	486
$x = 10$	450	540