

10-1

Practice B

Form K

The Pythagorean Theorem

Use the triangle at the right. Find the missing side length. If necessary, round to the nearest tenth.

1. $a = 16, b = 12$

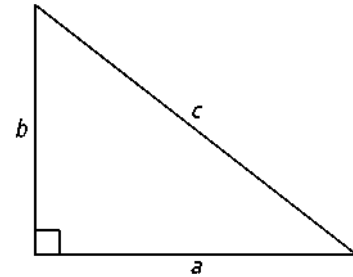
2. $a = 0.8, b = 0.6$

3. $a = 15, c = 20$

4. $b = 18, c = 30$

5. $a = 72, c = 98$

6. $b = 32, c = 44$



7. A hiker goes six miles east and then turns south. If the hiker finishes 7.2 miles from the starting point, how far south did the hiker go?

8. A teacher is cutting along the diagonal of a rectangular piece of construction paper for a bulletin board which is 11 inches long and 8.5 inches wide. What will be the length of the cut?

Determine whether the given lengths can be side lengths of a right triangle.

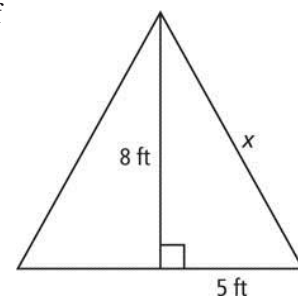
9. 15 m, 20 m, 25 m

10. 22 ft, 24 ft, 30 ft

11. 38 yd, 72 yd, 80 yd

12. 46.5 cm, 62 cm, 77.5 cm

13. A roofer is gathering information for purchasing supplies for the roof shown at the right. Using the dimensions shown, what is the length x of the roof from the top to the lower edge? If necessary, round to the nearest tenth.



Any set of three positive integers that satisfies the equation $a^2 + b^2 = c^2$ is a *Pythagorean triple*. Determine whether each set of numbers is a Pythagorean triple.

14. 5, 9, 11

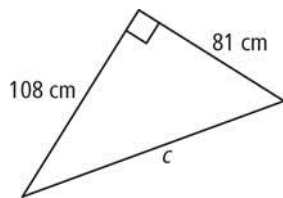
15. $\sqrt{3}, \sqrt{4}, \sqrt{5}$

16. 8, 10, 6

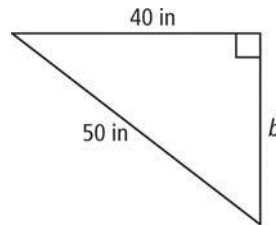
17. $\sqrt{5}, \sqrt{8}, \sqrt{13}$

Find each missing side length.

18.



19.



20. A rectangular box is 9 in. wide, 11 in. tall, and 20 in. long. What is the diameter of the smallest circular opening through which the box will fit? If necessary, round to the nearest tenth of a centimeter.

21. Find the height of a pyramid whose square base measures 30 yd on each side and whose slant height is 45 yd. If necessary, round to the nearest tenth of a yard.

22. **Open-Ended** Write the lengths of the sides of a right triangle with one leg whose length is 75 cm.

23. **Writing** State the various parts of a right triangle. Explain how you can identify the parts. Describe the relationship between each part of the right triangle and the Pythagorean Theorem.