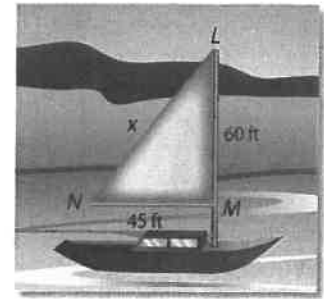


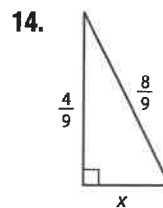
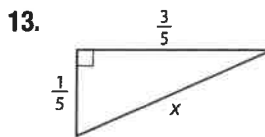
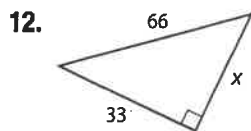
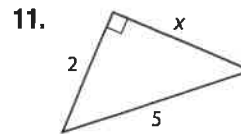
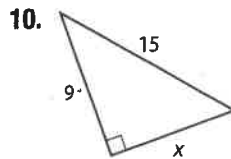
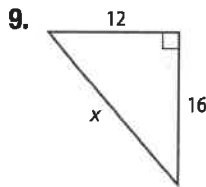
- Example 3** 5. **MULTIPLE CHOICE** The mainsail of a boat is shown. What is the length, in feet, of \overline{LN} ?
- A 52.5 C 72.5
 B 65 D 75



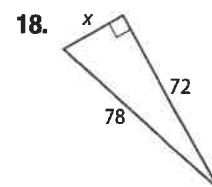
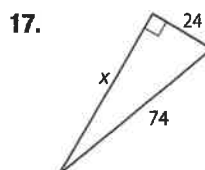
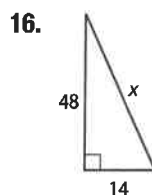
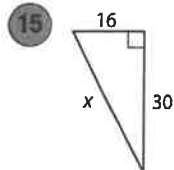
- Example 4** Determine whether each set of numbers can be the measures of the sides of a triangle. If so, classify the triangle as *acute*, *obtuse*, or *right*. Justify your answer.
6. 15, 36, 39 7. 16, 18, 26 8. 15, 20, 24

Practice and Problem Solving Extra Practice is on page R8.

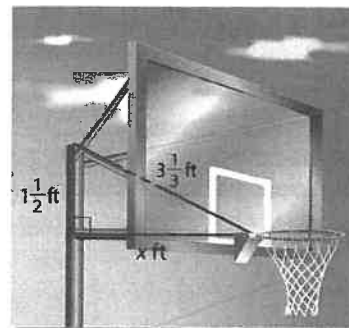
Example 1 Find x .



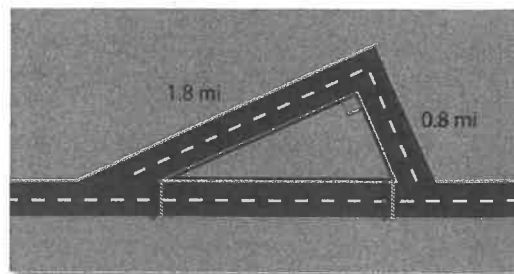
Example 2 **CCSS PERSEVERANCE** Use a Pythagorean Triple to find x .



Example 3 19. **BASKETBALL** The support for a basketball goal forms a right triangle as shown. What is the length x of the horizontal portion of the support?



20. **DRIVING** The street that Khaliah usually uses to get to school is under construction. She has been taking the detour shown. If the construction starts at the point where Khaliah leaves her normal route and ends at the point where she re-enters her normal route, about how long is the stretch of road under construction?

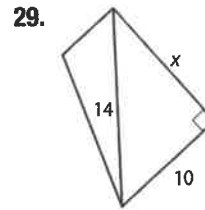
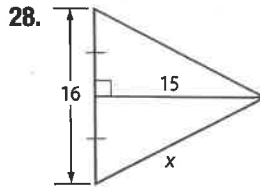
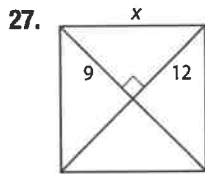


Example 4

Determine whether each set of numbers can be the measures of the sides of a triangle. If so, classify the triangle as *acute*, *obtuse*, or *right*. Justify your answer.

21. 7, 15, 21 22. 10, 12, 23 23. 4.5, 20, 20.5
 24. 44, 46, 91 25. 4.2, 6.4, 7.6 26. 4, 12, 14

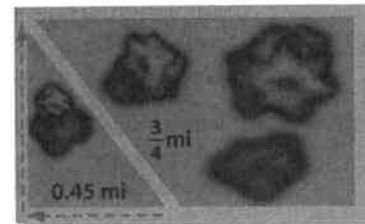
Find x .



COORDINATE GEOMETRY Determine whether $\triangle XYZ$ is an *acute*, *right*, or *obtuse* triangle for the given vertices. Explain.

30. $X(-3, -2), Y(-1, 0), Z(0, -1)$ 31. $X(-7, -3), Y(-2, -5), Z(-4, -1)$
 32. $X(1, 2), Y(4, 6), Z(6, 6)$ 33. $X(3, 1), Y(3, 7), Z(11, 1)$

34. **JOGGING** Brett jogs in the park three times a week. Usually, he takes a $\frac{3}{4}$ -mile path that cuts through the park. Today, the path is closed, so he is taking the orange route shown. How much farther will he jog on his alternate route than he would have if he had followed his normal path?

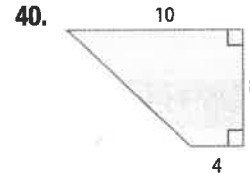
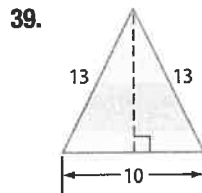
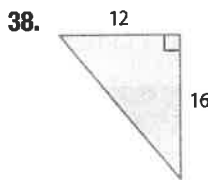


35. **PROOF** Write a paragraph proof of Theorem 8.5.

PROOF Write a two-column proof for each theorem.

36. Theorem 8.6 37. Theorem 8.7

CCSS SENSE-MAKING Find the perimeter and area of each figure.



41. **ALGEBRA** The sides of a triangle have lengths x , $x + 5$, and 25. If the length of the longest side is 25, what value of x makes the triangle a right triangle?

42. **ALGEBRA** The sides of a triangle have lengths $2x$, 8, and 12. If the length of the longest side is $2x$, what values of x make the triangle acute?

43. **TELEVISION** The screen aspect ratio, or the ratio of the width to the height, of a high-definition television is 16:9. The size of a television is given by the diagonal distance across the screen. If an HDTV is 41 inches wide, what is its screen size?

