Find the missing side length. Round to the nearest tenth.

1.

5

?

12

13

2.

?

9 cm

20 cm
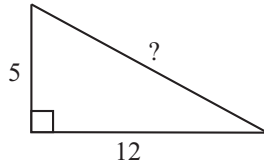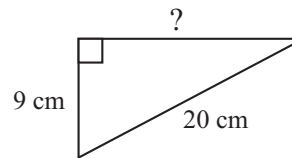
≈ 17.9 cm

Determine if a triangle with the given measures is a right triangle.

3.   3, 7, 10

No

4.   0.6, 0.8, 1

Yes

5.   11, 15, 18

No

6.   A boat leaves a dock and travels 16 miles due south and then 30 miles due east. How many miles is the boat from the dock?

34 miles

7.   An 18-foot ladder leans against a house so that the top of the ladder touches the house at a spot 12 feet above the ground. To the nearest tenth of a foot, what is the distance between the base of the ladder and the base of the house?

13.4 feet

8. Anita is sitting on the ground and holding the end of a kite string. The length of the string is 60 feet. The distance between Anita and the spot on the ground directly below the kite is 45 feet. To the nearest foot, how high above the ground is the kite?

40 feet

9. Over a horizontal distance of 20 meters, a ramp rises six meters vertically. Find the length of the ramp to the nearest tenth of a meter.
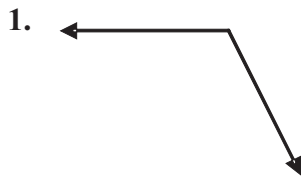
20.9 meters

Journal

1. In your own words, what does the Pythagorean Theorem state?

2. When using the formula $a^2 + b^2 = c^2$, how do you know which side is a, which side is b, and which side is c?

3. Explain why a triangle with side lengths of four, six, and eight is not a right triangle.
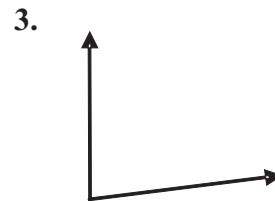
Cumulative Review

Classify the angle and estimate its measure.

1.

2.

3.

Obtuse:
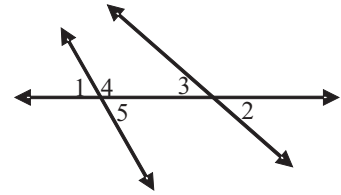**About 120°**

Acute:
About 30°

Acute:
About 85°

83

Module 8   Points, Lines, Angles, and Triangles
Lesson 7   Right Triangles

**4. Identify the special angle pair name
(vertical, complementary, supplementary, corresponding,
alternate interior, alternate exterior).**

a. ∠1 and ∠3

   Corresponding

b. ∠1 and ∠2

   Alternate exterior

c. ∠2 and ∠3

   Vertical

d. ∠3 and ∠5

   Alternate Interior

e. ∠1 and ∠4

   Supplementary

f. ∠2 and ∠5

   Corresponding

Classify the triangle by its sides and by its angles.

5.
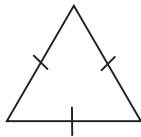
   Equilateral: Acute

6.
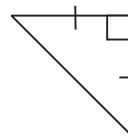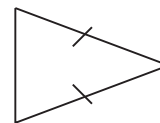
   Isosceles: Right

7.
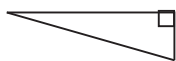
   Scalene: Right

8.

   Isosceles: Acute

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Possible Journal Answers

1. The Pythagorean Theorem states that in a right triangle, the length of one leg squared plus the length of the other leg squared is the same as the length of the hypotenuse squared.

2. *c* is the length of the hypotenuse. It is the longest side of the triangle and is the side that is across from the right angle. *a* and *b* are the lengths of the legs. They are the other two sides of the triangle. It does not matter which leg is *a* and which leg is *b*.

3. It is not a right triangle because the sum of the squares of the legs does not equal the square of the hypotenuse. The legs are four and six, and the hypotenuse is eight.

$$\text{Sum of squares of legs: } 4^2 + 6^2 = 52$$
$$\text{Square of hypotenuse: } 8^2 = 64$$
$$52 \neq 64$$

Module 8   Lesson 7

Independent Practice