

GUIDED PRACTICE

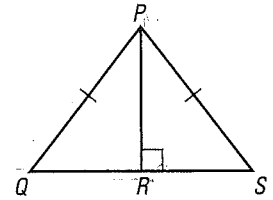
Vocabulary Check ✓

1. Sketch an obtuse scalene triangle. Label its interior angles 1, 2, and 3. Then draw its exterior angles. Shade the exterior angles.

Concept Check ✓

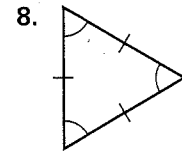
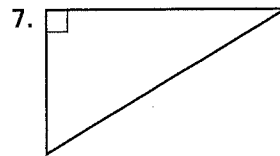
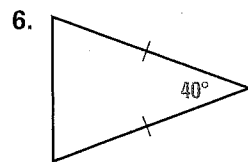
In the figure, $\overline{PQ} \cong \overline{PS}$ and $\overline{PR} \perp \overline{QS}$. Complete the sentence.

2. \overline{PQ} is the ? of the right triangle $\triangle PQR$.
3. In $\triangle PQR$, \overline{PQ} is the side opposite angle ?.
4. \overline{QS} is the ? of the isosceles triangle $\triangle PQS$.
5. The legs of $\triangle PRS$ are ? and ?.



Skill Check ✓

In Exercises 6–8, classify the triangle by its angles and by its sides.



9. The measure of one interior angle of a triangle is 25° . The other interior angles are congruent. Find the measures of the other interior angles.

PRACTICE AND APPLICATIONS

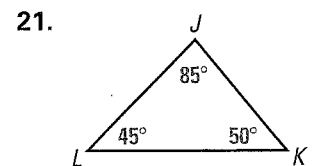
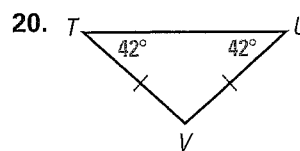
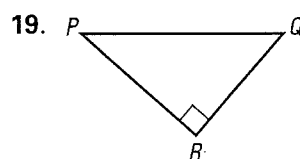
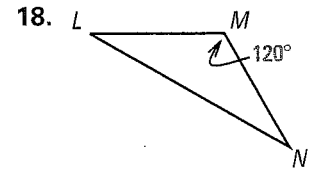
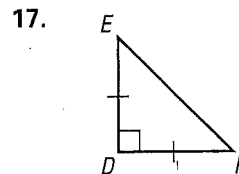
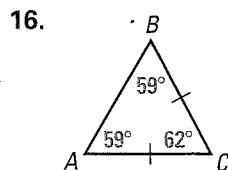
STUDENT HELP

Extra Practice to help you master skills is on p. 809.

MATCHING TRIANGLES In Exercises 10–15, match the triangle description with the most specific name.

- | | |
|---|----------------|
| 10. Side lengths: 2 cm, 3 cm, 4 cm | A. Equilateral |
| 11. Side lengths: 3 cm, 2 cm, 3 cm | B. Scalene |
| 12. Side lengths: 4 cm, 4 cm, 4 cm | C. Obtuse |
| 13. Angle measures: $60^\circ, 60^\circ, 60^\circ$ | D. Equiangular |
| 14. Angle measures: $30^\circ, 60^\circ, 90^\circ$ | E. Isosceles |
| 15. Angle measures: $20^\circ, 145^\circ, 15^\circ$ | F. Right |

CLASSIFYING TRIANGLES Classify the triangle by its angles and by its sides.



STUDENT HELP

HOMEWORK HELP

- Example 1: Exs. 10–26, 34–36
 Example 2: Exs. 27, 28, 45
 Example 3: Exs. 31–39
 Example 4: Exs. 41–44

LOGICAL REASONING Complete the statement using *always*, *sometimes*, or *never*.

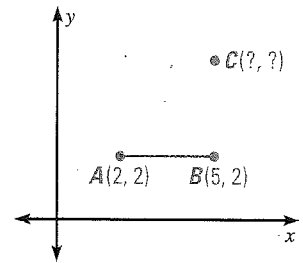
22. An isosceles triangle is ___?___ an equilateral triangle.
23. An obtuse triangle is ___?___ an isosceles triangle.
24. An interior angle of a triangle and one of its adjacent exterior angles are ___?___ supplementary.
25. The acute angles of a right triangle are ___?___ complementary.
26. A triangle ___?___ has a right angle and an obtuse angle.

IDENTIFYING PARTS OF TRIANGLES Refer to the triangles in Exercises 16–21.

27. Identify the legs and the hypotenuse of any right triangles.
28. Identify the legs and the base of any isosceles triangles. Which isosceles triangle has a base that is also the hypotenuse of a right triangle?

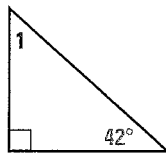
USING ALGEBRA Use the graph. The segment \overline{AB} is a leg of an isosceles right triangle.

29. Find the coordinates of point C . Copy the graph and sketch $\triangle ABC$.
30. Find the coordinates of a point D that forms a different isosceles right triangle with leg \overline{AB} . Include a sketch with your answer.

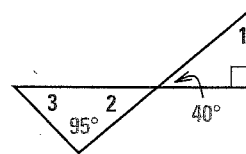


FINDING ANGLE MEASURES Find the measure of the numbered angles.

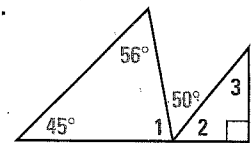
31.



32.



33.



STUDENT HELP

INTERNET
HOMEWORK HELP
 Visit our Web site
www.mcdougallittell.com
 for help with Exs. 31–33.

USING ALGEBRA The variable expressions represent the angle measures of a triangle. Find the measure of each angle. Then classify the triangle by its angles.

34. $m\angle A = x^\circ$

$m\angle B = 2x^\circ$

$m\angle C = (2x + 15)^\circ$

35. $m\angle R = x^\circ$

$m\angle S = 7x^\circ$

$m\angle T = x^\circ$

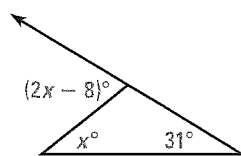
36. $m\angle W = (x - 15)^\circ$

$m\angle Y = (2x - 165)^\circ$

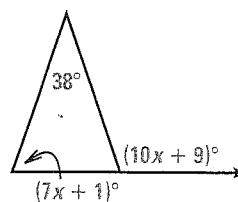
$m\angle Z = 90^\circ$

EXTERIOR ANGLES Find the measure of the exterior angle shown.

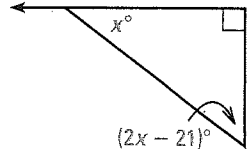
37.



38.



39.



40. **TECHNOLOGY** Use geometry software to demonstrate the Triangle Sum Theorem or the Exterior Angle Theorem. Describe your procedure.