MAIN IDEA
I will identify, describe, and classify triangles.

New Vocabulary
right triangle  
acute triangle  
obtuse triangle  
isosceles triangle  
equilateral triangle  
scalene triangle

Math Online
macmillanmh.com  
• Extra Examples  
• Personal Tutor  
• Self-Check Quiz

Triangles
This sandwich is cut in half. What figure does each half resemble?

There are many different types of triangles. You can classify triangles by the measure of their angles.

Classify Triangles by Angles

A right triangle has one right angle.  
An acute triangle has three acute angles.

An obtuse triangle has one obtuse angle.

EXAMPLE
Classify by Angles
Classify the triangle. Use right, acute, or obtuse.

Since there is one obtuse angle, the triangle is obtuse.
Triangles can also be classified by the measure of their angles.

### Classify Triangles by Sides

<table>
<thead>
<tr>
<th>Key Concepts</th>
<th>At least two sides of an <strong>isosceles triangle</strong> are the same length.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All sides of an <strong>equilateral triangle</strong> are the same length.</td>
</tr>
<tr>
<td></td>
<td>No sides of a <strong>scalene triangle</strong> are the same length.</td>
</tr>
</tbody>
</table>

### Example

**Classify by Angles and Sides**

Classify the triangle. Use acute, right, or obtuse and isosceles, equilateral, or scalene. The triangle has three angles that are less than 90°. The triangle is acute. All of the sides are the same length, so it is also equilateral.

### Check What You Know

Classify each triangle. Use acute, right, or obtuse and isosceles, equilateral, or scalene. See Examples 1 and 2 (pp. 372–373)

1. ![Triangle 1]
2. ![Triangle 2]
3. ![Triangle 3]

4. What type of triangle is the pennant?

5. **Talk About It** Two sides of an equilateral triangle measure 3 feet. What is the measure of the third side? Explain.
Phoenix is the capital of Arizona. It has the greatest population of any capital city in the United States.

16. Classify the triangle formed by Phoenix, Yuma, and Grand Canyon.

17. Explain how you classified the triangle in Exercise 16.

---

**Data File**

Phoenix is the capital of Arizona. It has the greatest population of any capital city in the United States.

16. Classify the triangle formed by Phoenix, Yuma, and Grand Canyon.

17. Explain how you classified the triangle in Exercise 16.

---

374 Chapter 9 Identify and Describe Geometric Figures
H.O.T. Problems

OPEN ENDED Draw an example of each triangle.

18. right scalene triangle

19. obtuse isosceles triangle

20. WHICH ONE DOESN'T BELONG? Identify the term that does not belong with the other three. Explain.

right  obtuse  scalene  acute

21. WRITING IN MATH Can an equilateral triangle be obtuse? Explain your answer.

TEST Practice

22. In the figure, which two angles appear to be obtuse? (Lesson 9-4)

A Angles 1 and 2
B Angles 1 and 3
C Angles 1 and 4
D Angles 2 and 4

23. What kind of triangle always has 3 acute angles and 3 sides the same length? (Lesson 9-5)

F isosceles
G right
H equilateral
J scalene

Spiral Review

Classify each angle as right, acute, or obtuse. (Lesson 9-4)


27. Suppose the pattern at the right was extended to 30 figures in all. How many pentagons and octagons would there be? (Lesson 9-3)

Identify the first five multiples for each number. (Lesson 4-9)

28. 3
29. 5
30. 8
31. 11

Lesson 9-5 Triangles 375