1. Find the number of degrees in the third angle of the triangle.
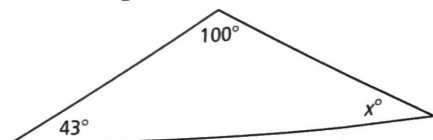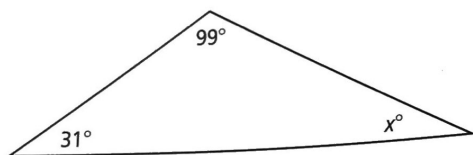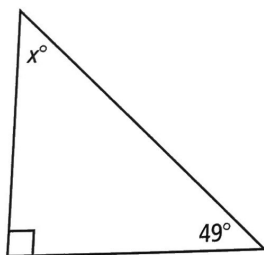

The figure is not drawn to scale.

2. An architect is designing a home. What is the measure of the missing angle of the roof?
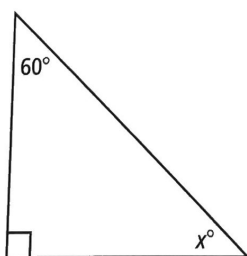

The figure is not drawn to scale.

3. There is a slide in the back of the school. The stairs for the slide go straight up. The angle made with the slide and the ground is 49°. What is the value of x?
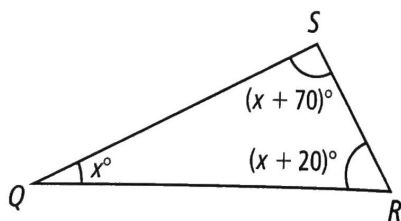

The figure is not drawn to scale.

4. Mental Math
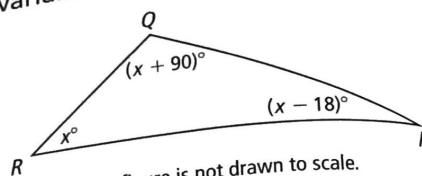   Find the value of the missing angle of the right triangle.

The figure is not drawn to scale.

5. In △QRS, $m\angle R$ is 20° more than $m\angle Q$ and $m\angle S$ is 70° more than $m\angle Q$. Find $m\angle R$.

The figure is not drawn to scale.

**6.** For the figure, find the value of the variable x and $m\angle Q$.


The figure is not drawn to scale.

7. a. Writing If the measures of two angles of a triangle are 100° and 19°, what is the measure of the third angle?

   b. Explain how a straight angle is related to the angles of a triangle.

8. Reasoning An art class is designing a sign to put by the entrance to the school. The sign is in the shape of a triangle and has one angle that is 87° and another which is 42°.

   a. What is the measure of the third angle?

   b. Explain how you could determine if the triangle is acute, right, or obtuse without finding the third angle.

9. Error Analysis On a math test the students are given a right triangle. One of the acute angles has a measure of 55°. One student says that the measure of the other acute angle is 125°.

   a. What is the measure of the other acute angle?

   b. What error might the student have made?

   A. The student only subtracted the right angle from 180°.

   B. The student subtracted the sum of the two given angles from 360°.

   C. The student added the right angle and the given acute angle, but did not subtract the sum from 180°.

   D. The student only subtracted the acute angle from 180°.

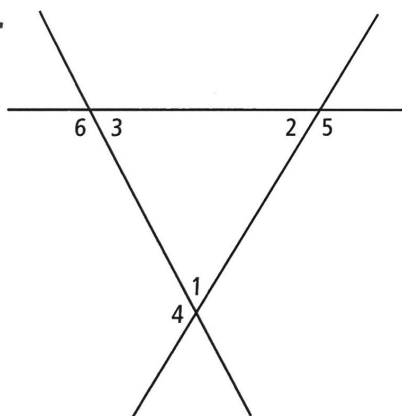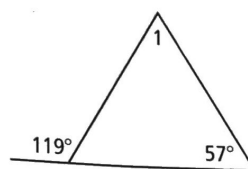**1.** Determine which of the labeled angles are exterior angles.

2.
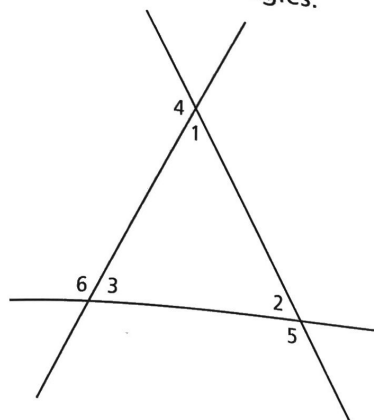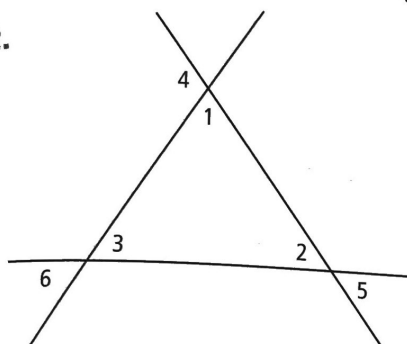
a. Which of the numbered angles in the figure are exterior angles?

b. Which of the numbered angles in the figure are congruent? List all that apply.
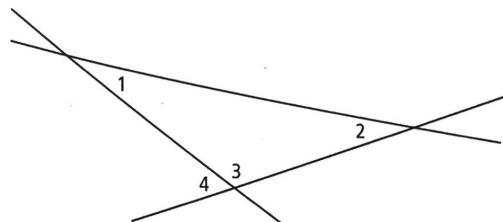
3.

a. What are the two remote interior angles for ∠4?

b. Which of the labeled angles are supplementary? List all that apply.
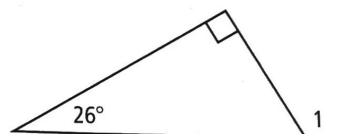
4. For the figure shown, find m∠1.

(The figure is not drawn to scale.)

5. Given that m∠4 = 68°, m∠1 = (5x − 8)°, and m∠2 = (6x − 12)°, find m∠1 and m∠2.
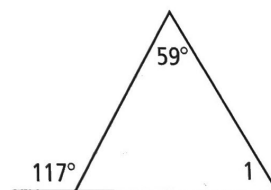
(The figure is not drawn to scale.)

6.

(The figure is not drawn to scale.)

a. Writing For the figure shown, find m∠1.

b. Explain two ways to find the missing angle measure of the triangle.
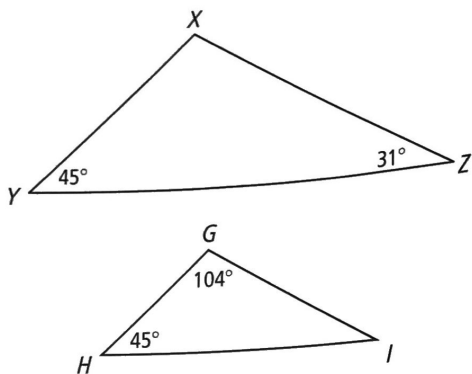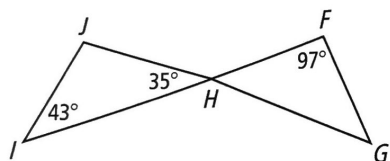
7.

(The figure is not drawn to scale.)

a. Reasoning For the figure shown, find m∠1.

b. Can you find the measure of ∠1 without using an exterior angle and the other remote interior angle? Explain.

1. Is △XYZ ~ △GHI? Figures are not drawn to scale.

2. Is △FGH ~ △JIH? Figure is not drawn to scale.

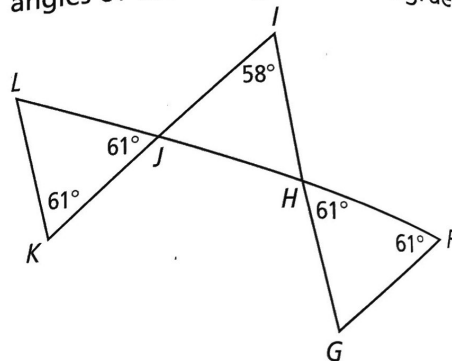**3.** Which triangles are similar? Select all that apply. The figure is not drawn to scale.
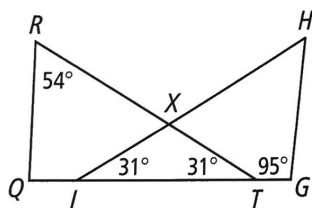
A. △TXI   B. △QRT

C. △GHI

4. a. Writing Is △GHI ~ △QRS? The figures are not drawn to scale.
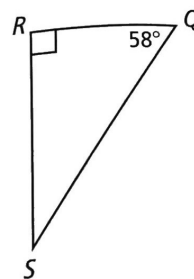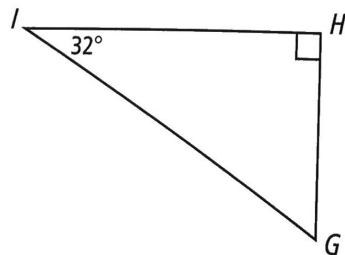
b. Describe how to use angle relationships to decide whether any two triangles are similar.

5. Error Analysis Anchil claims that the triangles △FGH and △KLJ are the only similar triangles because two angles of the triangles are congruent.

a. Which triangles are similar? Select all that apply. The figure is not drawn to scale.

A. △FGH   B. △KLJ

C. △JIH

b. What mistake might Anchil have made?

6. Jewelry A charm has the shape of two overlapping triangles. Is △XYZ ~ △XJK? The figure is not drawn to scale.

7. Is △
dr

8.