Lesson 10-4

Example 1 Find a Missing Measure
ALGEBRA Find $m\angle C$ in $\triangle ABC$ if $m\angle A = 51°, m\angle B = 103°$, and $m\angle C = x$.

Write and solve an equation to find $m\angle C$.

$$m\angle A + m\angle B + m\angle C = 180 \qquad \text{The sum of the measures is 180.}$$
$$51 + 103 + x = 180 \qquad \text{Write the equation.}$$
$$154 + x = 180 \qquad \text{Simplify.}$$
$$\underline{-154 \qquad -154} \qquad \text{Subtract 154 from each side.}$$
$$x = 26$$

So, the measure of $\angle C$ is 26°.

Example 2 Find a Missing Measure
STANDARDIZED TEST PRACTICE A piece of slate tile is in the shape of a triangle. Two of the angles have measures 69° and 55°. What is the measure of the third angle?

A 21°   **B** 35°   **C** 56°   **D** 125°

Read the Test Item
To find the missing measure, write and solve an equation.

Solve the Test Item
Let x represent the measure of the third angle.

$$69 + 55 + x = 180 \qquad \text{The sum of the measures is 180.}$$
$$124 + x = 180 \qquad \text{Simplify.}$$
$$\underline{-124 \qquad -124} \qquad \text{Subtract 124 from each side.}$$
$$x = 56$$

The measure of the third angle is 56°. So, the answer is C.
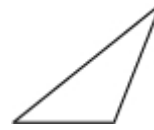
Example 3 Classify Triangles
Classify the triangle by its angles and by its sides.

The triangle has three acute angles and two congruent sides.
So, it is an acute, isosceles triangle.

Example 4 Classify Triangles

Classify the triangle by its angles and by its sides.

The triangle has one obtuse angle and no congruent sides.
So, it is an obtuse, scalene triangle.