

## Explorations

These exploratory exercises can be done using a computer with a program that draws and measures geometric figures.

Draw several isosceles triangles. For each triangle, measure all sides and angles. What do you notice?

What is the relationship between the congruent sides and some of the angles?

Draw several triangles with two congruent angles. Measure all sides.

What do you notice?

What is the relationship between the congruent angles and some of the sides?

# Some Theorems Based on Congruent Triangles

## Objectives

1. Apply the theorems and corollaries about isosceles triangles.
2. Use the AAS Theorem to prove two triangles congruent.
3. Use the HL Theorem to prove two right triangles congruent.
4. Prove that two overlapping triangles are congruent.

## 4-4 The Isosceles Triangle Theorems

The photograph shows the Transamerica Pyramid in San Francisco. Each of its four faces is an isosceles triangle, with two congruent sides. These congruent sides are called **legs** and the third side is called the **base**. The angles at the base are called *base angles* and the angle opposite the base is called the *vertex angle* of the isosceles triangle.

