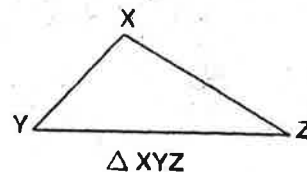


## WORKING WITH TRIANGLES

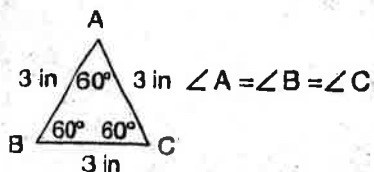
A **triangle** is a closed plane (flat) figure that has three sides and three angles. Triangles are named with three letters, one placed at the vertex of each angle. The symbol for triangle is  $\Delta$ .



### Types of Triangles

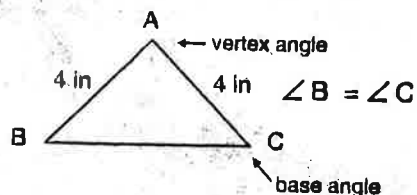
Here are the four most common types of triangles.

#### Equilateral Triangle



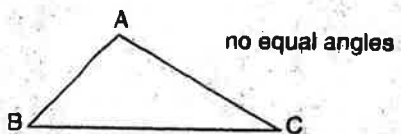
An **equilateral triangle** has three equal sides and three equal  $60^\circ$  angles.

#### Isosceles Triangle



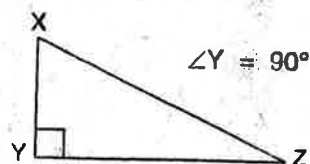
An **isosceles triangle** has two equal sides and two equal angles called **base angles**. The third angle is called the **vertex angle**.

#### Scalene Triangle



A **scalene triangle** has no equal sides and no equal angles.

#### Right Triangle



An isosceles or scalene triangle that has a  $90^\circ$  angle is also called a **right triangle**.

### Angle Relationships in a Triangle

The sum of the three angles in a triangle is equal to  $180^\circ$ .

#### Example

What is the value of  $\angle B$  in  $\Delta ABC$ ?

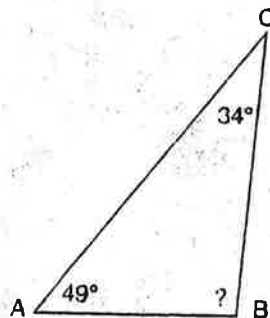
*Step 1.* Add  $\angle A$  and  $\angle C$ .

$$\angle A + \angle C = 49^\circ + 34^\circ = 83^\circ$$

*Step 2.* To find  $\angle B$ , subtract  $83^\circ$  from  $180^\circ$ .

$$\angle B = 180^\circ - 83^\circ = 97^\circ$$

**Answer:**  $\angle B = 97^\circ$



$$\angle A + \angle B + \angle C = 180^\circ$$