Introduction to Triangle

A triangle is a closed, 2-dimensional shape with 3 sides,
3 angles, and 3 vertices. A triangle is also a polygon.

In the given figure we can see that:

- A triangle has 3 sides. In triangle ABC, the sides are AB, BC, and CA.
- The angle formed by any two sides of a triangle is the angle of the triangle, denoted by the symbol ∠. A triangle has three angles. The three angles of the triangle ABC are ∠ABC, ∠BCA, and ∠CAB. These angles are also called ∠B, ∠C, and ∠A, respectively.
- The point of intersection of any two sides of a triangle is known as a vertex. A triangle has three vertices. In triangle ABC, the vertices are A, B, and C.

Properties of a Triangle

- The sum of all three interior angles of a triangle is always equal to 180°.
- The sum of the length of any two sides of a triangle is always greater than the length of the third side.
- The area of a triangle is equal to half of the product of its base and height.

On the basis of angles, triangles can be classified as the following:

- Acute Triangle or Acute-angled Triangle All the angles of triangle are of less than 90°.
- Right Triangle or Right-angled Triangle One angle of triangle is of 90°.
- Obtuse Triangle or Obtuse-angled Triangle One angle of triangle is more than 90°.

On the basis of lengths, triangles can be classified as the following:

- Scalene triangle When all the three sides are of unequal length.
- Isosceles triangle When two sides of the triangle are equal.
- Equilateral triangle When all the sides of the triangle are equal.

Let us understand with an example:

Example: In an isosceles triangle, if the measure of

each equal angle is 50°,50°, then find the measure

of the third angle.

Solution: Given:

The measure of each equal angle in an isosceles

triangle is 50° Let the measure of the third angle

be x.

We know that the sum of the measure of interior

angles of a triangle is 180°. Now, 50° + 50° + x = 180° \Rightarrow x=180°-100=80° Hence, the measure of the third angle is 80°.

