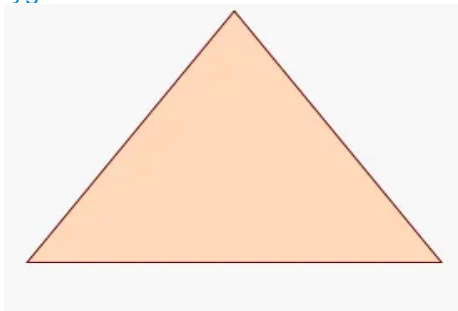# Topic: Basic concepts of Geometry

Chapter-6
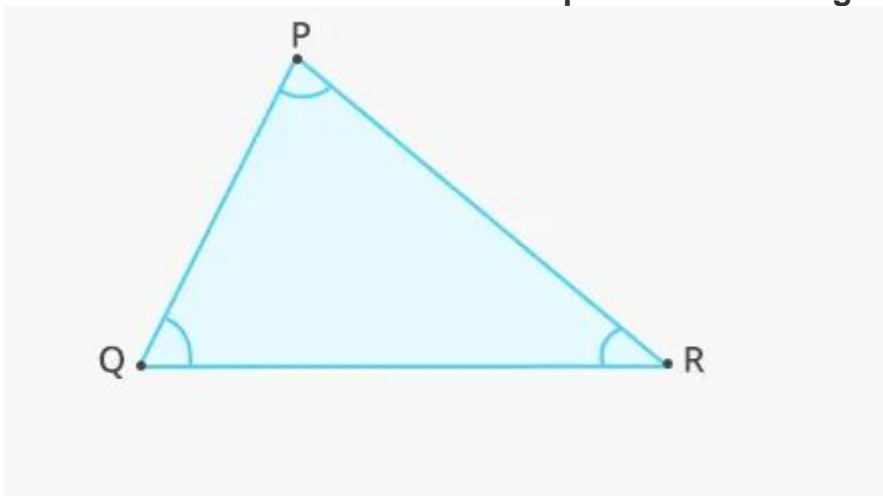
DAY-1

What is a Triangle?

In geometry, a triangle is a closed, two-dimensional shape with three straight sides. A triangle is also a polygon.

Properties of a Triangle

- A triangle has three sides three vertices, and three angles.
- The sum of the three interior angles of a triangle is always 180°.
- The sum of the length of two sides of a triangle is always greater than the length of the third side.
- A triangle with vertices P, Q, and R is denoted as △PQR.
- The area of a triangle is equal to half of the product of its base and height.

Different Types of Triangles

To classify triangles according to their angles, we measure each of its interior angles. Triangles can be classified by angles, as:

Acute Triangle	Right Triangle	Obtuse Triangle

Triangles by Angles

Acute
All angles acute
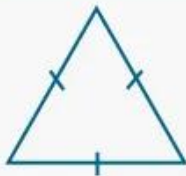
Right
One right angle

Obtuse
One obtuse angle

An acute triangle has all interior angles acute (less than 90°), a right triangle has one right angle (equal to 90°) and an obtuse triangle has one obtuse angle (greater than 90°).

To classify the triangles according to their sides, we measure the length of each of its sides. Triangles can be classified by their sides, as:

Equilateral Triangle	Isosceles Triangle	Scalene Triangle

Triangles by Sides

Equilateral
All three sides are equal

Isosceles
Two sides are equal

Scalene
No sides are equal