



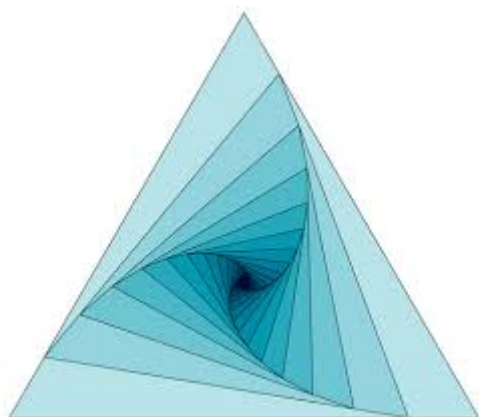
ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION

- **Subject- Mathematics** Study Material -4 **Class 5**
- **Date : 8.05.2020**
- **Chapter: Geometry**

- **Triangle and Types of Triangles**

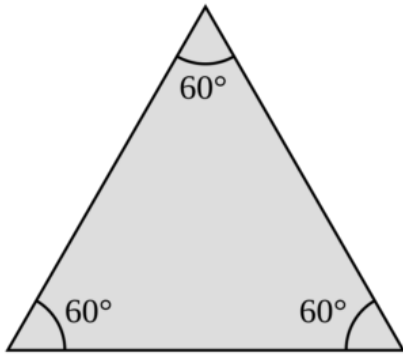


Triangle is a three-sided polygon. This closed figure consists of three lines which are linked at the endpoint to each other. The main properties of the triangle are that the sum of the interior angle of the triangle will be 180° and the sum of the exterior angles will be 360° always. Triangle can be classified according to their sides and interior angles. Following are the details about each qualification.

Types of Triangles with Respect to Sides

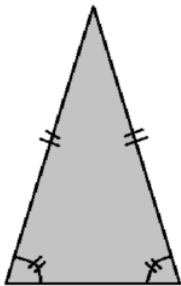
Equilateral Triangle

This type of triangle consists of three equal sides and equal angles. Every side of the triangle is of the same length and every angle will be of the same measure of 60° . The following figure is an equilateral triangle –



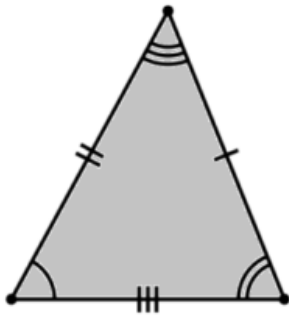
Isosceles triangle

The triangle with only two equal sides is known as the isosceles triangle. Not only two equal sides, the isosceles triangle also consists of two equal angles. The following figure is of the isosceles triangle-



Scalene Triangle

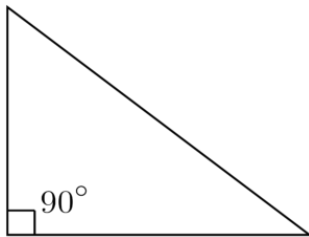
The triangle with no equal sides is the scalene triangle. Each line of this triangle is of different length. Following is the figure of the scalene triangle:



Triangles with Respect to Angles

Right Triangle

This triangle consists of one right angle and two acute angles. The right angle is an angle which measures 90 degrees and the acute angles are those angles which measure less than 90 degrees. Thus Right triangle is a triangle with one angle of 90° and the other two angle that measures less than 90° are acute angles. The right triangle is an angle with one 90° angle and two less than 90° angles. The following figure shows the right triangle-



Obtuse Triangle

This is a triangle with two acute angles and one obtuse angle. The acute angle is those angles which measure less than 90° whereas the obtuse angle is those angle which measures above 90° . Therefore, an obtuse triangle is a combination of two acute angles and one obtuse angle.

Acute Triangle

An acute triangle is a triangle which consists of three acute angles. This is the triangle which consists of three angles all of below 90° .

Equiangular triangle

An equiangular triangle is an angle with equal angles. Every angle of this triangle measures the same degrees.

When we learn about the various types of triangle, we keep in mind the measurement of sides and angles. The above classification will now make it easier for you to differentiate between triangles. Now every triangle is not just a triangle for you. You can now easily differentiate between the shapes of the triangle as whether it is a right triangle or an equilateral triangle.

Question 1: An equilateral triangle can also be called an acute angle, why?

Answer: All the three sides and angles of an equilateral triangle are equal. We know that the sum of angles in a triangle is 180° . Since all the three angles in an equilateral triangle are equal, we write it as:

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

Now, $\angle A = \angle B = \angle C$, hence the sum of three angles can be written as $\angle A + \angle A + \angle A = 3 \angle A$

$$3 \angle A = 180^\circ$$

$$\angle A = 180/3$$

$$= 60^\circ$$

Since all the angles in an equal, therefore angle A, Angle B, Angle C is 60 degree .

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