Class 7



Important Formulas

Chapter 6 – The Triangles and its Properties

- 1. A triangle is a figure made up by three line segments joining, in pairs, three non-collinear points. That is, if A, B, C are three non-collinear points, the figure formed by three line segments AB, BC and CA is called a triangle with vertices A, B, C.
- 2. The three line segments forming a triangle are called the sides of the triangle.
- 3. The three sides and three angles of a triangle are together called the six parts or elements of the triangle.
- 4. A triangle whose two sides are equal, is called an isosceles triangle.
- 5. A triangle whose all sides are equal, is called an equilateral triangle.
- 6. A triangle whose no two sides are equal, is called a scalene triangle.
- 7. A triangle whose all the angles are acute is called an acute triangle.
- 8. A triangle whose one of the angles is a right angle is called a right triangle.
- 9. A triangle whose one of the angles is an obtuse angle is called an obtuse triangle.
- 10. The interior of a triangle is made up of all such points P of the plane, as are enclosed by the triangle.
- 11. The exterior of a triangle is that part of the plane which consists of those points Q, which are neither on the triangle nor in its interior.
- 12. The interior of a triangle together with the triangle itself is called the triangular region.
- 13. The sum of the angles of a triangle is two right angles or 180°.
- 14. If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the interior opposite angles.
- 15. In any triangle, an exterior angle is greater than either of the interior opposite angles.
- 16. The sum of any two sides of a triangle is greater than the third side.
- 17. In a right triangle, if a, b are the lengths of the sides and c that of the hypotenuse, then $c^2 = a^2 + b^2$
- 18. If the sides of a triangle are of lengths a, b and c such that $c^2 = a^2 + b^2$, then the triangle is right-angled and the side of length c is the hypotenuse.
- 19. Three positive numbers a, b, c in this order are said to form a Pythagorean triplet, if $c^2 = a^2 + b^2$. Triplets (3, 4, 5) (5, 12, 13), (8, 15, 17), (7, 24, 25) and (12, 35, 37) are some Pythagorean triplets.