Atomic Energy Central School 5,Mumbai.

Class 9- Maths Vacation Work

1.Prove that if the diagonals of a parallelogram are equal, then it is a rectangle.

2.The angles of a quadrilateral are in the ratio 3:5:9:13. Find all the angles of the quadrilateral.

3.A triangular park has sides 120m, 80m, and 50m. A gardener has to put a fence all around it and also plant grass inside. How much area does he need to plant? Find the cost of fencing if the rate is rupee20 per meter, leaving a 3m wide gate on one side.

4.In the given figure, angle ABC=69°and angle ACB=31°. Find angle BDC. (Assume a figure is provided showing A, B, C, D on the circle circumference).

5.The perimeter of an isosceles triangle is 32cm. The ratio of the equal side to the base is 3:2. Find the area of the triangle using Heron's formula.

6.Prove that the line drawn through the center of a circle to bisect a chord is perpendicular to the chord.

7.If two equal chords of a circle intersect within the circle, prove that the line segment joining the point of intersection to the center makes equal angles with the chords.

8.Find the area of a quadrilateral ABCD in which
AB=3cm,BC=4cm,CD=4cm,DA=5cm, and AC=5cm

9.Show that the line segments joining the midpoints of the opposite sides of any quadrilateral bisect each other.

10.Prove that the angle subtended by an arc at the center is double the angle subtended by it at any point on the remaining part of the circle.

11. Write the statements and proofs of all the theorems in Chapters 8 and 9 that are proved in the textbook.