

**WORKSHEET CLASS IX ( PT-3)**

**MATHEMATICS**

1. Find the semi-perimeter of an equilateral triangle of side  $2a$
2. Find the area of a triangle whose sides are  $3\text{cm}$ ,  $4\text{cm}$ ,  $5\text{cm}$ .
3. Find the area of a triangle whose base and altitude are  $5\text{ cm}$  and  $4\text{ cm}$  respectively.
4. A number is selected from first 50 natural numbers .What is the probability that it is a multiple of 3 or 5?
5. If a two digit number is chosen at random, then what is the probability that the number chosen is a multiple of 3?
6. Show that if the diagonals of a parallelogram are perpendicular then it is a rhombus
7. Show that the diagonals of a square are equal and bisect each other at right angles.
8. Show that if the diagonals of a quadrilateral are equal and bisect each other at right angle , then it is a square.
9. Two sides of a triangular field are  $85\text{m}$  and  $154\text{m}$  in length, and its perimeter is  $324\text{m}$  .Find the area of the field.
10. The lengths of the sides of a triangle are in the ratio  $3:4:5$  and its perimeter is  $144\text{ cm}$ .Find the area of the triangle and the height corresponding to the longest side.
11. A bag contains 5 black, 7 red and 3 white balls .A ball is drawn from the bag at random .Find the probability that the ball drawn is (a) red (b) black or white (c) not black.
12. A card is drawn at random from a pack of 52 cards.Find the probability that the card drawn is (a) a black king (b) neither an ace nor a king (c) spade or an ace.
13. In a parallelogram, opposite sides are equal.
14. A diagonal of a parallelogram divides it into two congruent triangles
15. A quadrilateral is a parallelogram, if its one pair of opposite sides are equal and parallel.
16. Find the area of the quadrilateral ABCD  $AB= 7\text{ cm}$ ,  $BC= 6\text{cm}$  ,  $CD= 12\text{ cm}$ ,  $DA= 15\text{ cm}$ , and  $AC= 9\text{ cm}$ .
17. Find the area of a trapezium whose parallel sides are  $25\text{ cm}$ ,  $13\text{ cm}$  and other sides are  $15\text{ cm}$  and  $15\text{ cm}$ .
18. Show that the line segments joining the mid-points of opposite sides of a quadrilateral bisect each other.
19. Show that the quadrilateral formed by joining the mid-points of the sides of a square is also a square
20. ABCD is a parallelogram in which P, Q, R, S are mid points of the sides AB,BC,CD,DA respectively.AC is diagonal.Show that PQRS is a parallelogram.