

DELHI PUBLIC SCHOOL, JAMMU

ASSIGNMENT SA-II

SESSION (2016-17)

CLASS: IX

SUB: MATHEMATICS

- 1 If two sides of a cyclic quadrilateral are parallel prove that remaining two sides are equal.
- 2 In an isosceles ΔABC with $AB = AC$, a \odot passing through B and C intersects the sides AB and AC at D and E respectively prove that $DE \parallel BC$.
- 3 If two opposite sides of a cyclic quadrilateral are equal then other two sides are parallel.
- 4 Prove that the quadrilateral formed by the angle bisectors of a cyclic quadrilateral is also cyclic.
- 5 Construct a ΔABC where base $BC = 4\text{cm}$, $\angle B = 45^\circ$ and $AB - AC = 2.5\text{m}$.
- 6 Construct a ΔABC such that $BC = 6\text{m}$, $AB = 6\text{cm}$ and $AD = 4\text{cm}$.
- 7 A solid is composed of a cylinder with hemispherical end. The whole length of the solid is 108cm and the diameter of the hemispherical end is 36cm . Find the cost of polishing the surface at the rate of $14 \text{ paise} / \text{cm}^2$.
- 8 Water in a canal which is 30 dm and 12cm deep is flowing with velocity of $10 \text{ km} / \text{h}$. How much water will it irrigate in 30 minutes, if 8cm of standing water is required for irrigation?
- 9 A spherical ball of lead, 3cm in diameter is melted and recast into three spherical balls. The diameter of two of these balls are 1cm and 15 cm . Find the diameter of third ball.
- 10 The mean of 13 observations is 14. If the mean of the first 7 observations is 12 and that of last 7 observations is 16, find the 7th observation.
- 11 The distribution of weight (in kg) of 100 students is given below

Weight (in kg)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No. of Student	13	25	28	15	12	5	2

- 12 The diagonals AC and BD of a quadrilateral ABCD are perpendicular to each other. Show that the quadrilateral formed by joining the mid-point of its consecutive sides is a rectangle.

- 13 Show that the quadrilateral formed of joining the consecutive sides of a square is also a square.
- 14 Show that the area of a rhombus is half the product of the diagonal.
- 15 The diagonals of a quadrilateral ABCD intersect at O, A line through O meet's AB in X and opposite side CD in Y. Show that area (AXYD) = $\frac{1}{2}$ area (ABCD).
- 16 Draw the graph of $x-y=0$ and $x+y=0$ on the same graph paper where do these lines intersect?
- 17 Write five solution of $2(x-1)+3y= 4$.
- 18 Two dies are thrown simultaneously. Find the probability of getting
- (a) doublets
 - (b) Pairs whose sum is 7
 - (c) Pair (Whose first no is prime and other is odd).
- 19 A rectangular sheet of a paper 44cm x18cm is rolled along its length and cylinder is formed. Find the volume of cylinder.
- 20 A corn cob is shaped so we what like a come. The broadest end of the cob, that , in its base radius of 2.1 cm and a length of 20cm. Assume that 1cm^2 of the cob carries four grain how many grain do you expect on the entire cob?