MATHEMATICS MOCK TEST

Class: IX | Set: 28

Time: 1 Hour 30 Minutes | Written Marks: 35 | Viva: 5 | Total: 40 Marks

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Define a 'point' according to Euclid's definitions.
2. Find the total surface area of a hemisphere of radius r.
3. If two lines intersect, then the vertically opposite angles are always _____.
4. Find the semi-perimeter of a triangle with sides 8 cm, 11 cm and 13 cm.
5. What is the coordinate of the origin?

SECTION B

(2 Marks Each)

6. In the figure, if $x + y = w + z$, then prove that AOB is a line.
7. The sides of a triangle are in the ratio $12 : 17 : 25$ and its perimeter is 540 cm. Find its area using Heron's formula.
8. Find the volume of a sphere whose radius is 0.63 m.
9. Prove that equal chords of a circle subtend equal angles at the centre.
10. Find the mean of the first ten natural numbers.

SECTION C

(3 Marks Each)

11. Prove that "If a ray stands on a line, then the sum of two adjacent angles so formed is $180°$."
12. A floral design on a floor is made up of 16 tiles which are triangular, the sides of the triangle being 9 cm, 28 cm and 35 cm. Find the cost of polishing the tiles at the rate of 50p per cm^2.
13. In a circle of radius 5 cm, AB and CD are two parallel chords of lengths 6 cm and 8 cm respectively. If the chords are on opposite sides of the centre, find the distance between them.
14. Represent the following data by a frequency polygon:

Class	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	5	12	15	22	14	4

SECTION D

(4 Marks Each)

15. **Question 15:** A hemispherical tank is made up of an iron sheet 1 cm thick. If the inner radius is 1 m, then find the volume of the iron used to make the tank.

16. **Question 16:** In $\triangle ABC$, the bisector AD of $\angle A$ is perpendicular to side BC. Show that $AB = AC$ and $\triangle ABC$ is isosceles.

VIVA VOCE

(5 Marks)

- **Euclid:** What is a 'Theorem' in geometry?
- **Lines:** What is the sum of angles on one side of a straight line at a point?
- **Heron's Formula:** When is the formula $\sqrt{s(s-a)(s-b)(s-c)}$ used?
- **Circles:** Define a 'Chord'.
- **Statistics:** What is the difference between Mean and Median?