MATHEMATICS MOCK TEST

Class: IX | Set: 16

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Find the area of an equilateral triangle with side $2\sqrt{3}$ cm.
2. How many lines can pass through a single point according to Euclid's axioms?
3. Find the class mark of the class interval $90 - 120$.
4. If the radius of a sphere is r, what is its total surface area?
5. Write one solution for the equation $x - 2y = 4$.

SECTION B

(2 Marks Each)

6. The sides of a triangle are 5 cm, 12 cm and 13 cm. Find its area using Heron's formula.
7. In a circle of radius 5 cm, AB is a chord of length 8 cm. Find the distance of the chord from the centre.
8. The angles of a quadrilateral are $(x-5)^\circ, x^\circ, (x+5)^\circ$ and $(x+10)^\circ$. Find the value of x.
9. If the mean of $x, x+2, x+4, x+6, x+8$ is 11, find the value of x.
10. Find the curved surface area of a right circular cone whose slant height is 10 cm and base radius is 7 cm.

SECTION C

(3 Marks Each)

11. $ABCD$ is a rhombus. Show that diagonal AC bisects $\angle A$ as well as $\angle C$.
12. Prove that the angles subtended by an arc in the same segment of a circle are equal.
13. A triangular park has sides 120 m, 80 m and 50 m. Find the cost of leveling the park at the rate of ₹7 per m^2.
14. Draw a bar graph for the following data representing the number of students in different sections of Class IX:

Section	A	B	C	D	E
No. of Students	40	45	35	50	30

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SECTION D

(4 Marks Each)

Question 15: Prove that the line segment joining the mid-points of two sides of a triangle is parallel to the third side and is half of it.

16. **Question 16:** A lead shot of diameter 6 cm is melted and cast into a right circular cylinder of height 24 cm. Find the radius of the base of the cylinder.

VIVA VOCE

(5 Marks)

- **Circles:** What is the angle in a semi-circle?
- **Heron's Formula:** Can we find the area of a quadrilateral using Heron's formula? How?
- **Geometry:** What is the sum of any two sides of a triangle compared to the third side?
- **Statistics:** What is the difference between primary data and secondary data?
- **Mensuration:** What is the formula for the volume of a hemisphere?