MATHEMATICS MOCK TEST

Class: VIII | Set: 29

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

NAME: _____ ROLL NO: _____

SECTION A (1 Mark Each)

1. What is the probability of picking a King from a well-shuffled deck of 52 cards?

2. Find the class mark of the class interval $125 - 175$.

3. State the y-coordinate of any point that lies on the x-axis.

4. A pie chart sector represents $\frac{1}{3}$ of the total data. Find its central angle.

5. In which quadrant does the point $(-5, 8)$ lie?

SECTION B (2 Marks Each)

6. A die is thrown once. Find the probability of getting a number divisible by 3.

7. Plot the points $X(2, 2), Y(6, 2),$ and $Z(4, 6)$ on a graph sheet. Join them to form a triangle.

8. The following are the heights (in cm) of 6 students: 150, 142, 155, 148, 150, 160. Find the range and mode.

9. Write the coordinates of the vertices of a square with side 4 units, one vertex at $(0, 0)$, and the square lying in the second quadrant.

10. In a bag, there are 8 red, 7 blue, and 5 green marbles. One marble is drawn at random. Find the probability that it is NOT green.

SECTION C (3 Marks Each)

11. **Histogram Construction:** Construct a histogram for the following frequency distribution of marks of 50 students in a Science test:

Marks	0–10	10–20	20–30	30–40	40–50
No. of Students	4	8	15	13	10

12. From a well-shuffled deck of 52 playing cards, one card is drawn. Find the probability of getting:

(i) A 'Face Card' (J, Q, K).

(ii) A red card of suit 'Hearts'.

(iii) A black number card (2 to 10).

13. Draw a linear graph for the following data showing the number of years and the simple interest (in ₹) on a principal of ₹2000:

Time (Years)	1	2	3	4	5
Interest (₹)	160	320	480	640	800

From the graph, find the interest for 3.5 years.

14. A rectangle has vertices at $A(2,2), B(8,2),$ and $C(8,5).$ Find the coordinates of the fourth vertex D and calculate the area of the rectangle.

SECTION D
(4 Marks Each - Case Study)

Case Study 1: Histogram Analysis (The Factory Wages)
The following frequency table represents a histogram of the weekly wages (in ₹) of 80 workers in a factory.

Weekly Wages (₹)	800–810	810–820	820–830	830–840	840–850
No. of Workers	5	12	25	30	8

Answer the following questions:

(i) How many workers earn ₹830 or more? (2 Marks)

(ii) Which wage group has the minimum number of workers and what is the class mark of that group? (2 Marks)

Case Study 2: The Journey Graph Interpretation
A car travels from City A to City B. The following table represents the time-distance linear graph data:

Time	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM
Distance (km)	0	40	80	80	120	160

(i) During which time interval did the car take a break? Justify using the data. (2 Marks)

(ii) What was the total distance covered by 1:30 PM (assuming constant speed between 1 PM and 2 PM)? (2 Marks)

VIVA VOCE
(5 Marks)

- **Data Handling:** What is the purpose of using a "kink" or "broken line" on the axis of a histogram?

- **Probability:** What is the sum of the probability of an event happening and the probability of it not happening?

- **Coordinate Geometry:** If a point (x, y) has $x < 0$ and $y < 0$, which quadrant does it belong to?

- **Graphs:** What does a horizontal line on a distance-time graph tell you about the motion?

- **Pie Charts:** How do you convert a percentage value into a central angle?