
MATHEMATICS MOCK TEST

Class: VIII | Set: 26

Time: 2 Hours | Written Marks: 35 | Viva: 5 | Total: 40 Marks

NAME: _____

ROLL NO: _____

SECTION A

(1 Mark Each)

1. Solve the inequation $3x + 5 \leq 20$ for $x \in \{1, 2, 3, 4, 5, 6\}$.
2. Find the radius of a circle whose circumference is 132 cm. (Take $\pi = 22/7$)
3. At what distance from the x -axis is the point $Q(0, 7)$ located?
4. Find the total surface area of a cube whose side is 4 cm.
5. A card is drawn from a well-shuffled pack of 52 cards. What is the probability that it is a 'Red' card?

SECTION B

(2 Marks Each)

6. Solve the inequation $\frac{x}{2} + 5 < 8$ and represent the solution on a number line for $x \in \mathbb{W}$ (Whole numbers).
7. Find the area of a circle whose radius is 10.5 cm. (Take $\pi = 22/7$)
8. Plot the points $A(2, 4)$ and $B(-2, 4)$ on a coordinate plane. Find the length of the line segment AB .
9. Find the volume of a cylinder with base radius 1.4 m and height 5 m.
10. Two fair coins are tossed simultaneously. Find the probability of getting at least one 'Head'.

SECTION C

(3 Marks Each)

11. Solve: $3(x - 2) < 2(x + 1)$ and list the solution set if x is an integer such that $-5 \leq x \leq 5$.
12. A circular grass plot of radius 42 m has a path of width 7 m running around it on the **outside**. Find the area of the path.
13. Draw the graph of the linear equation $x - y = 3$ by finding at least three solutions.
14. The length, breadth and height of a rectangular box are in the ratio 1 : 2 : 3. If its total surface area is 88 cm^2 , find its dimensions.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Number Card Box

A box contains 10 cards numbered 1, 2, 3, ..., 10. One card is drawn at random from the box.

- (i) What is the probability that the number on the card is a multiple of 2 or 3? (2 Marks)
- (ii) Find the probability that the number on the card is a prime number. (2 Marks)

Case Study 2: Industrial Road Roller

A construction company uses a cylindrical road roller of diameter 1.4 m and length 2 m to level a road.

- (i) Find the lateral (curved) surface area of the road roller in square metres. (2 Marks)
- (ii) How much area will the roller level in 100 complete revolutions? (2 Marks)

VIVA VOCE

(5 Marks)

- **Linear Inequations:** If $-x > 5$, what is the relationship for x when we multiply by -1 ?
- **Circles:** Define 'Circumference' and state its formula in terms of diameter.
- **Coordinate Geometry:** What is the name of the y -coordinate of a point?
- **Solids:** If the height of a cylinder is doubled keeping the radius same, how many times does its volume increase?
- **Probability:** What is the range of values for the probability of any event?