
MATHEMATICS MOCK TEST

Class: VIII | Set: 24

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

NAME: _____

ROLL NO: _____

SECTION A

(1 Mark Each)

1. Find the solution set for the inequation $x - 7 > -3$ where $x \in \{1, 2, 3, 4, 5, 6\}$.
2. What is the circumference of a circle whose diameter is 21 cm? (Take $\pi = 22/7$)
3. Find the coordinates of a point which lies on the x -axis and is at a distance of 7 units from the origin in the negative direction.
4. Find the total surface area of a cube whose edge measures 0.5 m.
5. A letter is chosen at random from the word '**PROBABILITY**'. What is the probability that the letter is a vowel?

SECTION B

(2 Marks Each)

6. Solve the inequation $3(x-2) \leq 15$ and represent the solution on a number line for $x \in \mathbb{W}$ (Whole numbers).
7. Find the area of a semi-circle whose radius is 7 cm.
8. Plot the points $A(-3, 2)$ and $B(-3, -4)$ on a coordinate plane. Find the length of the line segment AB .
9. The volume of a cylinder is 4400 cm^3 and its height is 14 cm. Find the radius of its base.
10. A box contains 5 red, 4 blue, and 3 green marbles. One marble is drawn at random. Find the probability that it is **not** blue.

SECTION C

(3 Marks Each)

11. Solve the inequation $\frac{2x-1}{3} + 1 > 5$. List the solution set if the replacement set is integers \mathbb{I} such that $-5 \leq x \leq 10$.
12. Find the difference between the area and the circumference of a circle whose radius is 7 cm.
13. Draw the graph of the linear equation $y = x - 4$ by finding at least three solutions.

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14. A road roller of diameter 1.4 m and length 2 m takes 500 complete revolutions to level a playground. Find the area of the playground in square metres.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Number Card Box

A box contains 50 cards numbered from 1 to 50. A student is asked to pick a card at random.

- (i) What is the probability that the number on the card is a prime number less than 20? (2 Marks)
- (ii) What is the probability that the number on the card is a multiple of 7? (2 Marks)

Case Study 2: Construction Excavation

For the foundation of a building, a rectangular pit 10 m long, 8 m wide, and 2 m deep is dug.

- (i) Calculate the total volume of earth (soil) removed from the pit. (2 Marks)
- (ii) If the inner four walls of this pit need to be plastered, calculate the total area to be plastered in square metres. (2 Marks)

VIVA VOCE

(5 Marks)

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- **Coordinate System:** If a point lies on the y -axis, what is its x -coordinate always equal to?
 - **Solids:** What is the formula for the Total Surface Area of a cylinder including the top and bottom?
 - **Probability:** What is the probability of an event that is certain to happen?
 - **Linear Inequations:** When do we reverse the inequality sign while solving an inequation?
 - **Circles:** Define an 'Arc' and a 'Chord' of a circle.