
MATHEMATICS MOCK TEST

Class: IX | Set: 12

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

NAME: _____

ROLL NO: _____

SECTION A

(1 Mark Each)

1. Find the value of $(81)^{0.25}$.
2. Write the degree of the polynomial $p(x) = (x^2 + 1)(x^3 + x)$.
3. The point $(-4, 0)$ lies on which axis of the Cartesian plane?
4. Write a linear equation to represent the statement: "The y-coordinate is 3 more than twice the x-coordinate."
5. Is the sum of a rational number and an irrational number always irrational?

SECTION B

(2 Marks Each)

6. Rationalize the denominator of $\frac{1}{\sqrt{11}-\sqrt{7}}$.
7. If $(x + k)$ is a factor of the polynomial $x^3 + kx^2 - 2x + k + 4$, find the value of k .
8. Find the value of k if $x = 3, y = 1$ is a solution of the equation $2x - ky = 5$.
9. Factorize: $x^2 - 1 - 2a - a^2$.
10. Evaluate 105×106 without multiplying directly, using a suitable identity.

SECTION C

(3 Marks Each)

11. If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$, find the value of $x + \frac{1}{x}$.
12. Factorize $x^3 - 7x + 6$ using the Factor Theorem.
13. A point P is $(2, 3)$. Find the coordinates of Q if it is the reflection of P in the x-axis. Also find the coordinates of R , the reflection of P in the y-axis.
14. Draw the graph of $x + 2y = 6$. Find the area of the triangle formed by this line and the two axes.

SECTION D

(4 Marks Each)

15. If $x + y + z = 8$ and $xy + yz + zx = 20$, find the value of $x^3 + y^3 + z^3 - 3xyz$.
16. A lending library charges a fixed fare of ₹5 for the first two days and ₹3 per day for each extra day. Arushi paid ₹20 for a book kept for x days. Write a linear equation for this and draw its graph.

VIVA VOCE

(5 Marks)

- **Number Systems:** Can the sum of two irrational numbers ever be a rational number? Give an example.
- **Polynomials:** What is the degree of a zero polynomial?
- **Geometry:** If a point is reflected in the origin, what happens to the signs of its coordinates?
- **Linear Equations:** What is the standard form of a linear equation in two variables?
- **Identities:** Recite the expansion for $(a - b - c)^2$.