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SUMMATIVE ASSESSMENT—1 /SEPT-2025-26 **Time:90 min**

Class: 9th

MATHEMATICS

Max.Marks:80

I. Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet.: 8X1=8

1) Among the following the rational number is

- A) $\sqrt{25}$ B) π C) 1.232342345... D) $\sqrt{3}$

2) The coefficient of x^2 in $9x^2 + 4x - 6$ is

- A) 2 B) 3 C) 6 D) 9

3) $x + 2$ is an example of

- A) Constant polynomial B) Linear polynomial
C) Quadratic polynomial D) Cubic polynomial

4) The point at which the two coordinate axes meet is called

- A) Abscissa B) Ordinate C) Origin D) quadrant

5) The linear equation $2x - 5y = 7$ has

- A) A unique solution B) Two solutions C) Infinitely many solutions D) No solution

6) The mathematical statement which needs a proof is

- A) Theorem B) Axiom C) Definition D) Postulate

7) If a ray stands on a line, then the sum of two adjacent angles so formed is

- A) 360° B) 90° C) 60° D) 180°

8) An angle that measures 90° is called

- A) Obtuse angle B) Right angle C) Straight angle D) Acute angle

II. Answer the following: ***8x1=8***

9) The value of 1000° is

10) Add: $2\sqrt{2} + 5\sqrt{3}$ and $\sqrt{2} - \sqrt{3}$

11) The complementary angle of 65° is.

12) Expand: $(2a - 3b)^2$

13) Write the quadrant in which the point $(-4, -1)$ lie.

14) "Twice the first number is added to the second number, the result is 8". Express the statement as a linear equation in two variables.

15) Write any one Euclid's postulate.

16) Define obtuse angle.

III. Solve the following:

$8 \times 2 = 16$

17) Find 4 rational numbers between 1 and 2.

18) Express $0.333333\ldots$ in the form of $\frac{p}{q}$

19) Simplify: $(3 + \sqrt{3})(3 - \sqrt{3})$

20) Evaluate 105×106 using suitable identity. **OR**

By using suitable identity, find the product of $(x + 4)$ and $(x + 10)$

21) Write the quadrant or the axis on which do each of the points lie. $(-3, 5)$ $(2, -2)$ $(-3, 0)$ $(-4, -6)$

22) Find the value of k , if $x = 3$ and $y = 2$ is a solution of the equation $3x + 4y = k$.

OR

Express $5x + 2y = 2$ in the form $ax + by + c = 0$ and find the value of $a + b + c$.

23) In figure, if $AC = BD$, then prove that $AB = CD$



24) List out Euclid's undefined terms.

Define the following terms: i) Perpendicular lines. ii) Line segment

IV. Solve the following:

$9 \times 3 = 27$

25) Locate $\sqrt{2}$ on the number line

26) Rationalise the denominator and simplify: $\frac{1}{7 + \sqrt{2}}$

27) Classify the following as linear, quadratic and cubic polynomials:

(i) $x^2 + x$ (ii) $x - x^3$ (iii) $y^2 + y + 4$ (iv) $1 + x$ (v) $3t$ (vi) r^2 (vii) $7x^3$

28) Factorise: $x^3 + 13x^2 + 32x + 20$ **OR**

If $x + y + z = 0$ then prove that $x^3 + y^3 + z^3 = 3xyz$

29) Name the following with respect to graph.

a) Horizontal line b) Vertical line c) Each part of the plane divided by two axes

30) Verify which of the following are solutions of the equation $x + 2y = 6$.

(i) $(1, 2)$ (ii) $(2, 2)$ (iii) $(0, 3)$

31) Find the value of polynomial $4x^2 - 5x + 3$ at i) $x = 0$ ii) $x = -1$ and iii) $x = 2$

OR

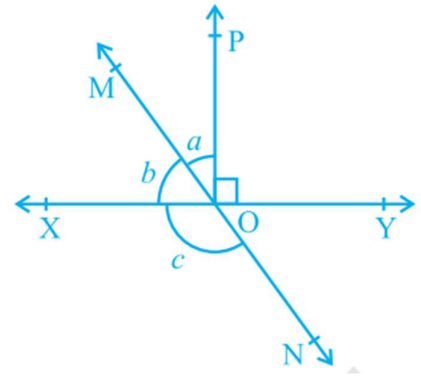
What are the possible expressions for the dimensions of the cuboids whose volumes are given as $12ky^2 + 8ky - 20k$?

32) If a point C lies between two points A and B such that $AC=BC$, then prove that $AC = \frac{1}{2}AB$. Explain by drawing the figure.

33) Prove that, “if two lines intersect each other, then the vertically opposite angles are equal”

OR

In figure, lines XY and MN intersect at O. If $\angle POV = 90^\circ$ and $a:b = 2:3$, find a, b and c.



V. Solve the following:

4X4=16

34) Expand the following: i) $(a + b)^2$ ii) $(a - b)^2$ iii) $(a + b + c)^2$ iv) $(a + b)^3$

35) Write any four solutions for the linear equation $3x + y - 12 = 0$.

36) Write any four axioms of Euclid’s Geometry. **OR**

Write true or false for the following statement.

- i) Only one line can pass through a single point.
- ii) There are an infinite number of lines which pass through two distinct points
- iii) If two circles are congruent, then their radii are equal.
- iv) The whole is lesser than the part.

37) It is given that $\angle XYZ = 64^\circ$ and XY is produced to a point P. Draw a figure from the given information. If ray YQ bisects $\angle ZYP$, then find measures of $\angle XYQ$ and reflex $\angle QYP$.

VI. Solve the following:

1X5=5

38) The coordinates of the three vertices of a square KLMN are K (-4, 2), L (3, 2), M (3, -5). Plot the points K, L, M on a graph. Complete the square and write the coordinates of N.