

Mathematics-IX (Objective)

Section-A

1	The matrix whose number of rows and columns are not equal is called	Column	Diagonal	Rectangular	Square matrix
2	If $A=A^t$ then the matrix is called	Skew symmetric	Symmetric	Identity	Null
3	A^{-1} of a matrix is	$\frac{1}{ A }AdjA$	$AdjA$	$\frac{1}{ A }$	$\frac{ A }{AdjA}$
4	If $a+a' = a'+a=0$ then a' is called	Additive identity	Additive inverse	Multiplicative inverse	Multiplicative identity
5	$3^3 \cdot 3^2 =$	3^6	3^5	9^6	9^5
6	$i^2 =$	1	-1	$\sqrt{-1}$	2
7	The logarithmic form of $2^4=4$ is	$\log_2 16 = 4$	$\log_2 4 = 16$	$\log_2 4 = 16$	$\log_4 16 = 2$
8	The characteristic of $\log 0.435 =$	1	2	-1	-2
9	$(a+b)^2 + (a-b)^2 =$	A^2+b^2-2ab	$4ab$	a^2+b^2+2ab	$2(a^2+b^2)$
10	$A^3-b^3 =$	$(a+b)(a^2-ab+b^2)$	$(a-b)(a^2+ab+b^2)$	$(a+b)(a^2+ab+b^2)$	$(a-b)(a^2-ab+b^2)$
11	The factors of $y^2-7y+12$ are	$(y+3)(y-4)$	$(y+3)(y+4)$	$(y-3)(y-4)$	$(y-3)(y+4)$
12	The HCF of x^2-y^2, x^2-xy is	$(x+y)$	$(x-y)$	(x^2-y^2)	$(x-xy)$
13	The solution set of $ x + 3 =5$	(2,8)	(2,-8)	(-2 ,8)	(-2,-8)
14	The point (5,-2) is located in Quadrant	I	II	III	IV
15	The polygon with three sides is called	Rectangle	Square	Parallelogram	Triangle

Mathematics-IX (Subjective)

Section-B

Attempt any Nine Parts

1- Solve the following equation for a, b, c and d $\begin{bmatrix} a+b & b+c \\ 2c+d & 2a-d \end{bmatrix} = \begin{bmatrix} -1 & 4 \\ 8 & 0 \end{bmatrix}$

2- If $A = \begin{bmatrix} 2 & -2 \\ 4 & 2 \\ -5 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 8 & 0 \\ 4 & -2 \\ 3 & 6 \end{bmatrix}$ then find matrix 'X' such that $2A + 3X = 5B$

3- Solve the following system of linear equation using Cramer's Rule $\begin{matrix} x-2y=5 \\ 2x-y=6 \end{matrix}$

4- Solve $\sqrt{\frac{625x^3y^4}{25xy^2}}$

5- $\left(\frac{x^p}{x^q}\right)^{p+q} \cdot \left(\frac{x^q}{x^r}\right)^{q+r} \cdot \left(\frac{x^r}{x^p}\right)^{r+p}$

6- Solve $\log_{\sqrt{3}} x = 16$

7- Simplify with the help of Logarithm $3.81 + 43.4$

8- Add $\frac{x+2}{x+3} + \frac{x+5}{x+3}$

9- If $a+b = 5$ and $a-b = \sqrt{17}$ then find the value of 'ab'

10- If $x = \frac{1}{\sqrt{2}-1}$ then find the value of $x - \frac{1}{x}$ and $x^2 + \frac{1}{x^2}$

11- Factorize $x^4 + \frac{1}{x^4} - 7$

12- Draw line segment by joining points (5 7) and (-7 9)

13- Find the solution set of $7-2x \geq 1$, for $\forall x \in N$

14- Using first formula of algebra find the un-known values when $a+b=5$ and $ab = 4$

Section (C)

Attempt any Three questions

QIII- Prove that A(-1,0) B(3,3) C(6,-1) and D(2,-4) is a Square

QIV- If two opposite sides of a quadrilateral are congruent the quadrilateral is a parallelogram

QV- The sum of the lengths of any two sides of a triangle is greater than the third side

QVI- Find the length of hypotenuse of the right angle triangle where one length is 3cm and other is 4cm.

Mathematics-X (Objective)

Section-A

1	The solution set of quadratic equation $2x + \frac{4}{x} = 9$	$(-1/2, -4)$	$(\frac{1}{2}, 4)$	$(-1/2, 4)$	$(1/2, -4)$
2	If $(x+1)(x-5)=0$ then the solution are	$(1, -5)$	$(1, 5)$	$(-1, -5)$	$(-1, 5)$
3	The Discriminant of the quadratic equation $x^2+9x+2=0$	-73	73	$73/2$	$-73/2$
4	The equation $x^2-6x+9=0$ then the roots will be	Complex	Real	Imaginary	Real and equal
5	The value of ω^2 is	$\frac{-1 - i\sqrt{3}}{2}$	$\frac{-1 + i\sqrt{3}}{2}$	$\frac{1 + i\sqrt{3}}{2}$	$-1+i\sqrt{3}$
6	Quadratic formula is	$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$\frac{b - \sqrt{b^2 - 4ac}}{2a}$	$\frac{+b - \sqrt{b^2 - 4ac}}{2a}$	$\frac{b - \sqrt{b^2 - 4ac}}{-2a}$
7	The mean proportion of 5 and 15 is	$\sqrt[3]{5}$	$-\sqrt[3]{5}$	$-\sqrt[5]{3}$	$\sqrt[5]{3}$
8	A ratio composes two quantities of	Different types	Same types	Opposite types	Greater types
9	If $P(x)$ and $Q(x)$ are two polynomials & $Q(x)$ is non zero polynomial then the fraction $\frac{P(x)}{Q(x)}$ is called	Rational	Irrational	Improper rational	Partial fraction
10	If $A=\{a, b\}$ & $B=\{1, 2\}$ then the total number of sub-set in $A \times B$ are	4	8	12	16
11	If A has two elements & B has three elements then the number of binary relation in $A \times B$ is	2×3	2^3	2^6	2^2
12	A point dividing the line segment into two equal parts is called	Median	Mid point	Chord	Interior point
13	A tangent is a line touching a circle at	One -point	Two -point	Three -point	Four-point
14	The range of 209, 260, 270, 311, 311 is	210	102	311	112
15	If two arcs of a circle are congruent then the corresponding chords are	Opposite	Equal unequal	Equal	Twice

Mathematics-X (Subjective)
Section-B

QII- Attempt any Nine Parts

- 1- Solve the given quadratic equation by factorization $12t^2 = t + 1$
- 2- Solve the equation $2\left(x^2 + \frac{1}{x^2}\right) - 9\left(x + \frac{1}{x}\right) + 14 = 0$
- 3- Solve the equation $2^{2+x} + 2^{2-x} = 10$
- 4- Solve $2\omega^4 - 5\omega^2 + 2 = 0$
- 5- Show that $(-1 + i\sqrt{3})^3 + (-1 - i\sqrt{3})^3 = 16$
- 6- Form a quadratic equation whose roots are $A = 1 + \sqrt{5}$ and $B = 1 - \sqrt{5}$
- 7- Use synthetic division to find the value of 'K' if '-2' is a zero of the polynomial $x^3 + 4x^2 + Kx + 8$
- 8- The area of a rectangular field is **252** square meters the length of its side is 9 meter longer than its width. Find its sides
- 9- Solve the equation $\frac{\sqrt{3x+2} + \sqrt{x}}{\sqrt{3x+2} - \sqrt{x}} = \frac{4}{1}$
- 10- Find the partial fraction of $\frac{x}{(x+1)^2}$
- 11- For any two sets $(A \cup B)' = A' \cap B'$ and $(A \cap B)' = A' \cup B'$
- 12- Find the Geometric Mean (GM) of the marks obtained by 9th class students **60, 65, 70, 80, 85, 90, 75**
- 13- Prove that $(\sin\theta + \cos\theta)^2 = 1 + 2\sin\theta\cos\theta$

SECTION-C

Note: Attempt any three questions

- QIII- Prove that one and only one circle can pass through non co-linear points
- QIV- Prove that two chords of a circle which are equidistant from the centre are congruent
- QV- Prove that the angle in a semi-circle is a right angle
- QVI- Construct a triangle with sides **2cm, 2.5 cm and 3cm** also draw its circumference