



Indian School Al Wadi Al Kabir

Pre Mid- term Examination 2026 - 27

Mathematics (Set 1)

Class: X

Max. Marks: 30

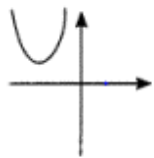
Date: 20-05-2026

Time: 1 hour

General Instructions:

1. This question paper is divided into 4 sections- A, B, C and D.
2. Section A comprises of 7 questions of 1 mark each.
3. Section B comprises of 3 questions of 2 marks each.
4. Section C comprises of 3 questions of 3 marks each.
5. Section D comprises of two case study-based questions of 4 marks each.
6. Internal choice has been provided for certain questions.

SECTION A

1.	If $x = ab^3$ and $y = a^3b$, where a and b are prime numbers, then [HCF (x, y) – LCM (x, y)] is equal to							1
	(A)	$1 - a^3b^3$	(B)	$ab(1 - ab)$	(C)	$ab - a^4b^4$	(D)	$ab(1-ab)(1+ ab)$
2.	Which of the following is not the graph of a quadratic polynomial?							1
	(A)		(B)		(C)		(D)	
3.	Two lines are given to be parallel. The equation of one of these lines is $5x - 3y = 2$. The equation of the second line can be							1
	(A)	$-15x - 9y = 5$	(B)	$-15x + 9y = 5$	(C)	$9x - 15y = 6$	(D)	$15x + 9y = 5$
4.	If -4 is a zero of the polynomial $p(x) = x^2 - x - (2 + 2k)$, then the value of k is							1
	(A)	3	(B)	6	(C)	9	(D)	-9
5.	The greatest number that divides 30 and 80 leaving remainders 2 and 3 respectively is							1
	(A)	10	(B)	7	(C)	11	(D)	14

6.	If $2x + 3y = 11$ and $x - 2y = -12$, then the value of 'm' for which $y = mx + 3$ is							1
	(A)	- 1	(B)	1	(C)	- 2	(D)	
7.	DIRECTION: In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A) (B) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A) (C) Assertion (A) is true but reason (R) is false. (D) Assertion (A) is false but reason (R) is true. Assertion (A): The pair of linear equations $px + 3y + 59 = 0$ and $2x + 6y + 118 = 0$ will have infinitely many solutions if $p = 1$. Reason (R): If the pair of linear equations $px + 3y + 19 = 0$ and $2x + 6y + 157 = 0$ has a unique solution, then $p \neq 1$. SECTION B							1
8.	Solve for x and y: $141x + 93y = 189$; $93x + 141y = 45$							2
9.	(a) Prove that $7 - 3\sqrt{5}$ is an irrational number, given that $\sqrt{5}$ is an irrational number. OR (b) Check whether 12^n can end with the digit 0 for any natural number n.							2
10.	Find a quadratic polynomial whose zeroes are $3 + 2\sqrt{2}$ and $3 - 2\sqrt{2}$.							2
	SECTION C							
11.	(a) Find the zeroes of the polynomial $4x^2 + 4x - 3$ and verify the relationship between zeroes and coefficients of the polynomial. OR (b) If α and β are the zeroes of the polynomial $p(x) = 2x^2 + 5x + k$ satisfying the relation, $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$, then find the value of k.							3
12.	In a teachers' workshop, the number of teachers teaching French, Hindi and English are 48, 80 and 144 respectively. Find the minimum number of rooms required if in each room the same number of teachers are seated and all of them are of the same subject.							3
13.	Three years ago, Meera was thrice as old as Neha. Ten years later, Meera will be twice as old as Neha. Find the present ages of Meera and Neha.							3

	SECTION D	
14.	<u>Case study-based – 1</u> The below pictures are few natural examples of parabolic shape which is represented by a quadratic polynomial. A parabolic arch is an arch in the shape of a parabola. In structures, their curve represents an efficient method of load, and so can be found in bridges and in architecture in a variety of forms.    Now answer the following questions based on quadratic polynomials: (i) If α and $\frac{1}{\alpha}$ are the zeroes of the polynomial $2x^2 - x + 8k$, then find the value of k. 1 (ii) If α and β are the zeroes of the polynomial $2y^2 + 7y + 5$, find the value of $\alpha + \beta + \alpha\beta$. 1 (iii) (a) If α and β are zeroes of the polynomial $f(x) = x^2 - x - k$ such that $\alpha - \beta = 9$, then find k. 2 OR (b) If 2 and -3 are the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$, then find the values of a and b. 2	
15.	<u>Case study-based – 2</u> Rupesh purchased 3 chairs and one table for ₹ 1600 and his friend purchased 5 chairs and 2 tables for ₹ 2900. In both the cases, price of each chair and table are the same. Denoting the cost of one chair as ₹ x and the cost of one table as ₹ y, answer the following questions. (i) Represent the situations given above algebraically. 1 (ii) Write whether the pair of equations formed above are consistent or inconsistent. 1 (iii) (a) Find the solution of the pair of linear equations formed by the above situation. 2 OR (b) Find the cost of 5 chairs. 2 	
