



Indian School Al Wadi Al Kabir

Pre-Midterm Examination (2026-27)

Mathematics (Set 1)

Class: IX
Date: 17/05/2026

Max. Marks: 30
Time: 1 hour

General Instructions:

1. This Question paper contains - four sections A, B, C and D. Each section is compulsory. However, there are internal choices in some questions.
2. Section A has 06 MCQs and 01 Assertion-Reason based questions of 1 mark each.
3. Section B has 3 Very Short Answer (VSA)-type questions of 2 marks each.
4. Section C has 3 Short Answer (SA)-type questions of 3 marks each.
5. Section D has 2 source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.

Q. No.	SECTION A	Mark
1.	The linear polynomial $p(x) = 3x + 15$ represents the temperature in Celsius based on a variable x . At what value of x is the temperature 0°C ? a) 5 b) -5 c) 15 d) -15	1m
2.	If $(3a+2, 10) = (17, \frac{2b}{5})$ then the values of a and b are: a) -5, -25 b) -15, 10 c) 15, 50 d) 5, 25	1m
3.	The point which lies on y -axis at a distance of 5 units in the negative direction of y -axis is: a) (0,5) b) (5,0) c) (0,-5) d) (-5,0)	1m
4.	Which of the following is a linear polynomial? a) $10\sqrt{x} - x^2$ b) $\sqrt{2}x + 3$ c) $x^3 - 1$ d) $\frac{1}{x} + 5$	1m
5.	If the perpendicular distance of a point P from the x -axis is 5 units and from the y -axis is 3 units, and it lies in the IV quadrant, then the coordinates of P are: a) (-3,5) b) (-3, -5) c) (3,-5) d) (3,5)	1m
6.	Point P is located at $(-6, 3)$ on a coordinate plane. If point P is reflected across the y -axis to create image P' , the coordinates of P' is: a) $(6, -3)$ b) $(-6, -3)$ c) $(6,3)$ d) $(3, -6)$	1m

DIRECTION (Q.7): 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.

7. Assertion: If the ordinate of a point in xy plane is equal to its abscissa, then the point lies either in the first quadrant or in the second quadrant. 1m

Reason: A point both of whose coordinates are negative will lie in third quadrants.

SECTION B

8. A city planner uses a coordinate grid to map out a park. 2m

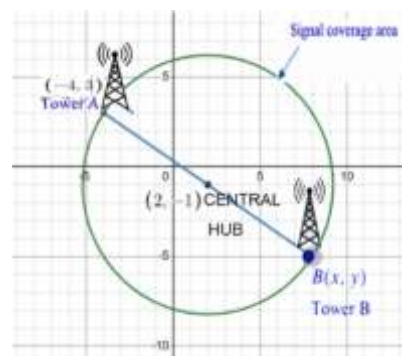
Main Fountain (A): (0, -5)	Children's Play Area (B): (-3.5, 6)	Food Court (C): (4, -4)
Parking Lot (D): (-8, -1)	Information Desk (E): (5, 0)	Science Museum (F): (2, 7)

Based on the information answer the following questions:

- Find the distance between the Main Fountain (A) and the Science Museum (F) if the museum is moved to (0, 7)
 - Which two facilities are located on the axes? Name the specific axis for each.
9. A rescue helicopter is stationed at a base located at the origin ((0, 0) of a coordinate grid. A distress signal is received from a hiker located at the coordinates (8, 15), where each unit on the grid represents 1 kilometer. What is the shortest direct distance the helicopter must fly to reach the hiker? 2m

OR

A signal transmission line passes through the centre of a circular signal coverage area. The centre of the circle is located at (2,-1). The transmission line forms the diameter of the circle. One end of the diameter is at Tower A (-4,3), and the other end is at Tower B (x, y). Find the radius of the signal coverage area.



10. A tank contains 500 litres of water. Every hour, 25 litres of water are drained out. 2m
- How much water remains after 4, 7, and 11 hours?
 - Write a linear expression for the water left after n hours.

SECTION C

- Plot the points A (4, 3), B (-4, 3), C (-4, -3) and D (4, -3) on a graph paper. Join them in order to form quadrilateral ABCD. Also, find the area of the figure so formed. 3m
- Verify whether the points A (0, 0), B (12, 16), and C (24, 7) form the vertices of a right-angled triangle. 3m
- The ages of Rahul and Harry are in the ratio 5:7. Four years later, the sum of their ages will be 56. What are their present ages? 3m

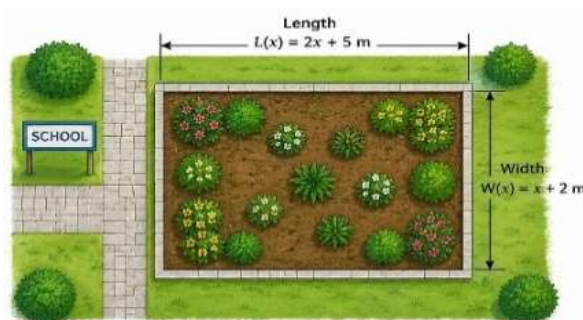
OR

Lakshmi is a cashier in a bank. She has currency notes of denominations ₹ 100, ₹ 50 and ₹ 10, respectively. The ratio of the number of these notes are 2:3:5. The total cash with Lakshmi is ₹ 4,00,000. How many notes of each denomination does she have? 3m

SECTION D

14. CASE STUDY-I:

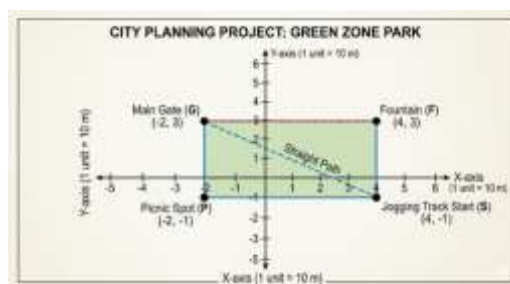
Gardening Design: A school plans a rectangular garden where the length is represented by the linear polynomial $L(x) = 2x + 5$ and the width is $W(x) = x + 2$ (in meters).



- i) Write a linear expression to represent the perimeter of the garden. 1m
 - ii) If $x = 32$ meters, find the actual length and breadth of the garden. 1m
 - iii) a) Using the dimensions obtained in part(ii), find the area of the garden. If grass is laid over the entire garden at the rate of ₹15 per m^2 , calculate the total cost required. 2m
- OR
- b) If the school has 164 meters of fencing material available to surround the garden, find the value of x . Also find the corresponding value of length and breadth. 2m

15. CASE STUDY-II: The City Planning Project:

The City Council is planning a new "Green Zone" park. The architects have laid out the park on a Cartesian plane (where 1 unit = 10 meters) to mark the positions of various facilities.



The Main Gate (G) is located at $(-2, 3)$.

The Fountain (F) is located at $(4, 3)$.

The Jogging Track Start (S) is at $(4, -1)$.

The Picnic Spot (P) is at $(-2, -1)$.

Based on the above information, answer the following questions:

- i) Find (abscissa of F) – (abscissa of G). 1m
- ii) In which quadrant is the Main Gate located? 1m
- iii) a) The City Council decides to install a water pipeline that runs from the Main Gate (G) to the Picnic Spot (P). Find the length of the pipeline required. If the cost of laying the pipeline is ₹500 per unit distance, calculate the total cost for this specific section. 2m

OR

- b) A security guard walks along the boundary of the park starting from the Fountain (F), moving to the Jogging Track Start (S), then to the Picnic Spot (P), and finally stopping at the Main Gate (G). Calculate the total distance covered by the guard. 2m
