Mathematics — Ganita Manjari

Chapter 13 Test 3

Two Variables, One Line

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B–D.
2. No calculators. Give exact answers unless an approximation is requested.
3. Read the scales on graphs carefully. Other diagrams are not necessarily to scale.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Which equation represents the x-axis?

(A) $x = 0$ (B) $y = 0$
(C) $x = y$ (D) $x + y = 0$

2. Which point lies on the y-axis?

(A) $(5,0)$
(B) $(-5,1)$
(C) $(0,-5)$
(D) $(1,-5)$

3. What is the x-intercept of $2x + 5y = 10$?

(A) 5 (B) 2
(C) 10 (D) -5

4. The graph of $y = -4$ is:

(A) Vertical, right of the origin
(B) Vertical, left of the origin
(C) Horizontal, above the origin
(D) Horizontal, below the origin

5. For what value of b is $3x + by = 6$ a vertical line?

(A) 3 (B) -3
(C) 0 (D) 6

SECTION B

(4 questions × 2 marks = 8 marks)

6. Write the equation of the line parallel to the y-axis through $(-4,7)$. Give two other points on it.

7. On $y = 2x - 5$, find the point whose x-coordinate is halfway between 3 and 9. Compare its y-coordinate with the average of the endpoint values.

8. Do $2x - 3y = 6$ and $y = \frac{2}{3}x - 2$ have the same graph? Explain without plotting.

9. Show that the points in the table lie on one straight line. Write its equation.

Point	A	B	C
x	−3	0	2
y	−4	2	6

SECTION C

(3 questions × 3 marks = 9 marks)

10. Find one point on $y = x + 3$ in each quadrant it enters. Explain why it has no point in the remaining quadrant.

11. The line in figure meets the axes at A and B. Read its intercepts, write its equation and find the area of triangle OAB, where O is the origin.



12. Using intercepts for $3x + 2y = 0$ gives (0,0) twice. Why is this insufficient to draw the line? Find two additional points on opposite sides of the origin.

SECTION D

(1 application question × 3 marks = 3 marks)

13. Opposite corners of a rectangular plot are $(-1, -2)$ and (5,3), with coordinates in metres. Its sides are parallel to the axes.

(i) Write equations of the lines containing its four sides.

(ii) Find its length and width.

(iii) Find its area.