Mathematics — Ganita Manjari

Chapter 13 Test 4

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. Substitute $y = 2x - 3$ into $3x + y = 7$. Which equation results?
(A) $3x + 2x + 3 = 7$
(B) $3x + (2x - 3) = 7$
(C) $3x + 2y - 3 = 7$
(D) $3x + (2x - 3) = y$

2. For the pair $x = -1$ and $2x - y = 4$, what is y?
(A) -6 (B) -2
(C) 2 (D) 6

3. A pair has the unique solution $(2,1)$. Swapping x and y throughout both equations gives which solution?
(A) $(2,1)$ (B) $(-2,-1)$
(C) $(-1,-2)$ (D) $(1,2)$

4. To isolate x in $ax + y = 4$ by dividing by a, which condition is necessary?
(A) $x \neq 0$ (B) $y \neq 0$
(C) $a \neq 0$ (D) $a = 0$

5. A solution of a pair is, by definition, an ordered pair satisfying:
(A) Only the first equation
(B) Both original equations
(C) Only the rearranged equation
(D) Any one equation

SECTION B

(4 questions × 2 marks = 8 marks)

6. Verify whether $(-1,2)$ is a common solution of $x + 2y = 3$ and $3x - y = -5$.

7. Solve $y = 3x - 2$ and $x + y = 10$ by substitution.

8. A student combines (4,1) from $x + y = 5$ and (2,0) from $2x - y = 4$ to report (4,0). Explain the error and solve.

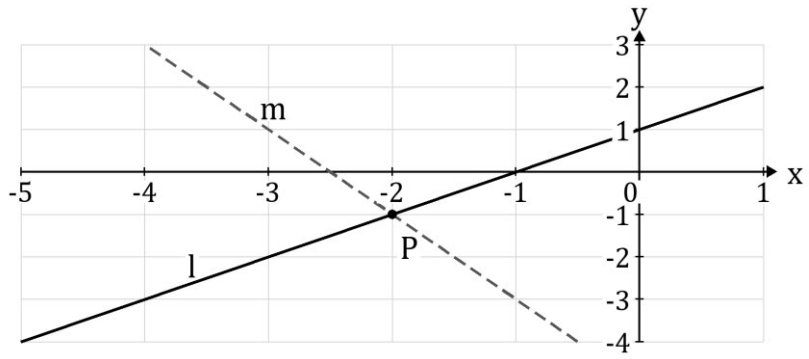
9. The table shows substitution working. Identify the first incorrect step and find the correct solution.

Step	Working
1	x + y = 4; 2x − y = 5; y = 4 − x
2	2x − (4 − x) = 5
3	x − 4 = 5

SECTION C

(3 questions × 3 marks = 9 marks)

10. Read the common solution of the lines in figure. Verify it in $y = x + 1$ and $y = -2x - 5$, and explain its meaning.



11. Solve $\frac{x}{2} + \frac{y}{3} = 2$ and $y = 3x - 3$ by substitution.

12. For a real constant d, solve $y = x + d$ and $2x + y = 9$. For which values of d is x negative?

SECTION D

(1 application question × 3 marks = 3 marks)

13. In a game, Riya's score is 5 more than twice Aman's score. Their scores total -4 points.

(i) Form a pair of equations.

(ii) Find both scores.

(iii) State who has the higher score.