# Mathematics — Ganita Manjari

## Chapter 13 Test 1

### 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 is a linear equation in two variables?

(A) $x^2 + y = 5$

(B) $xy = 6$

(C) $2x - 3y = 7$

(D) $\frac{1}{x} + y = 4$

**2.** In $4x - 7y + 9 = 0$, the coefficient of $y$ is:

(A) 4 (B) $-7$

(C) 9 (D) 7

**3.** Which choice of $(a, b, c)$ is forbidden in the standard form $ax + by + c = 0$?

(A) (0,0,5)

(B) (0,2,5)

(C) (3,0,5)

(D) (3,2,0)

**4.** Which ordered pair represents $x = -2$ and $y = 5$?

(A) $(5, -2)$ (B) (2,5)

(C) $(-2, -5)$ (D) $(-2,5)$

**5.** Which equation has the origin as a solution?

(A) $x + y = 4$ (B) $3x - 2y = 0$

(C) $x = 2$ (D) $y = -1$

## SECTION B

(4 questions × 2 marks = 8 marks)

**6.** Write $\frac{x}{3} - \frac{y}{2} = 1$ in standard form with integer coefficients. State $a, b, c$.

**7.** The table contains solutions of $x + 3y = 5$. Find $p$ and $q$.

| x | −1 | 2 | 5 |
|---|---|---|---|
| y | p | 1 | q |

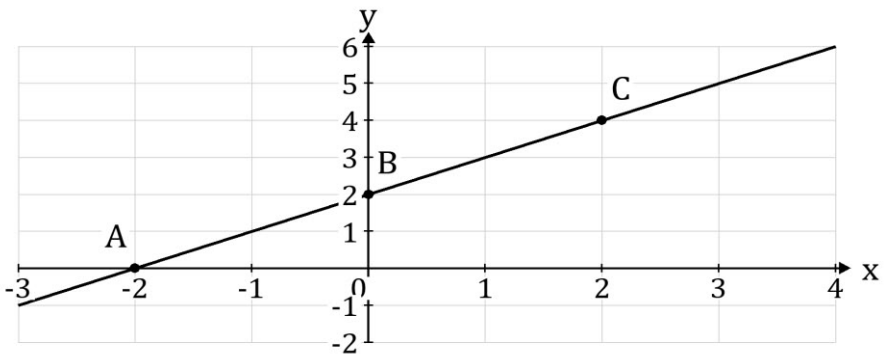
**8.** Verify that $(1,4)$ satisfies $2x + y = 6$. Does the reversed pair $(4,1)$ also satisfy it?

**9.** Find $k$ if $(-2,3)$ is a solution of $kx + 2y = 14$.

## SECTION C

(3 questions × 3 marks = 9 marks)

**10.** Use the line in figure to answer the following.




(i) Read the coordinates of A and B.
(ii) Choose its equation: $x - y + 2 = 0$ or $x + y - 2 = 0$.
(iii) Verify your choice using C.

**11.** A student finds $(0,5)$ and $(5,0)$ for $x + y = 5$ and claims these are the only solutions. Find three more solutions and explain why there are infinitely many real solutions.

**12.** After 3 m is discarded, a 30 m ribbon is cut into two positive lengths $x$ m and $y$ m. Form an equation. Explain why $(10,17)$ is possible but $(30, -3)$ is unsuitable.

## SECTION D

(1 application question × 3 marks = 3 marks)

**13.** A team's second-half score is 7 more than twice its first-half score. Let these scores be $y$ and $x$, respectively.
(i) Form a linear equation.
(ii) Find $y$ when $x = 9$.
(iii) Can $(8,22)$ represent the scores? Justify.