

Mathematics

Practice Test Paper 8

(Chapter 3: Pair of Linear Equations in Two Variables)

Class X | 2026-27

Time Allowed: 45 Minutes

Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Use algebraic methods where required. Use of calculators is not allowed.

SECTION A

(5 questions $\times$ 1 mark = 5 marks)

1. For $ax + by + c = 0$ and $dx + ey + f = 0$, with $d, e, f \neq 0$, distinct parallel lines require:

(A) $\frac{a}{d} = \frac{b}{e} \neq \frac{c}{f}$

(B) $\frac{a}{d} \neq \frac{b}{e}$

(C) $\frac{a}{d} = \frac{b}{e} = \frac{c}{f}$

(D) $\frac{a}{d} \neq \frac{b}{e} = \frac{c}{f}$

2. For $2x + 5y = 14$, which pair of values is a solution?

(A) (1, 2)

(B) (2, 1)

(C) (3, 2)

(D) (2, 2)

3. The pair $x + 3y = 10$, $2x + ky = 21$ is inconsistent when k equals:

(A) 3

(B) 6

(C) 7

(D) 10

4. A fraction with numerator x and denominator y becomes 1 when 2 is added to its numerator. Which linear relation follows?

(A) $x - y = 2$

(B) $x + y = 2$

(C) $x - y = -2$

(D) $2x = y$

5. In an elimination step, $7x + 4y = 22$ minus $3x + 4y = 10$ gives:

(A) $4x = 12$

(B) $10x = 32$

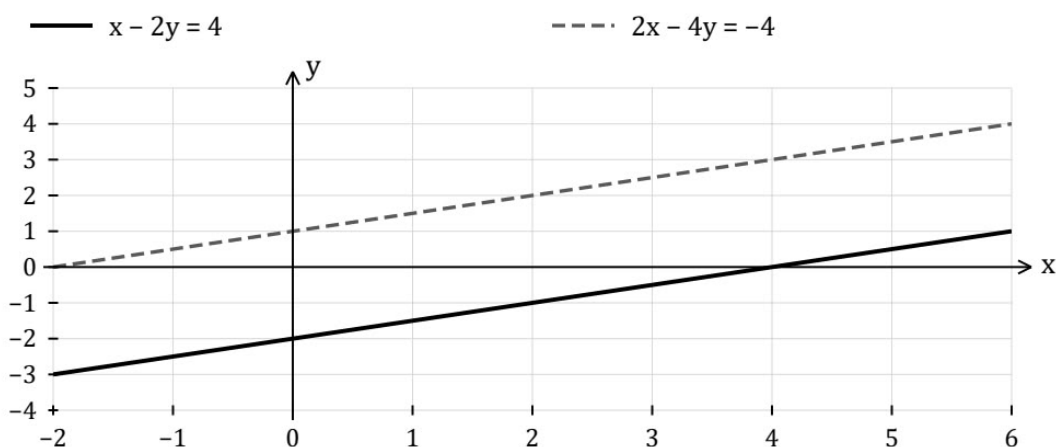
(C) $4x + 8y = 12$

(D) $4x = 32$

SECTION B

(4 questions $\times$ 2 marks = 8 marks)

6. Solve $3x - 5y = 4$ and $9x - 2y = 7$ by elimination.
7. Find k for which $kx + 2y = k - 2$ and $8x + ky = k$ are inconsistent.
8. Solve $4x = 12$ and $5y = -10$. Explain why this pair has a unique solution even though some coefficient ratios involve division by zero.
9. Use the graph to decide whether the pair is consistent. Read the y-intercept of each line.



SECTION C

(3 questions $\times$ 3 marks = 9 marks)

10. A fraction becomes $\frac{9}{11}$ when 2 is added to both its numerator and denominator, and $\frac{5}{6}$ when 3 is added to both. Find the fraction.
11. A father's age is three times the sum of his two children's ages. After five years, his age will be twice the sum of their ages then. Find his present age.
12. The numerator and denominator of a fraction are positive integers with sum 21. Adding 2 to the numerator and subtracting 3 from the denominator makes the fraction 1. Find the original numerator, denominator and fraction.

SECTION D

(Application Based Question - 3 marks)

13. Small and large water cans hold x L and y L. Three small and two large cans hold 46 L; five small and four large cans hold 84 L.
- (i) Form the equations.
- (ii) Find the capacity of a small can.
- (iii) Find the combined capacity of four cans of each size.