QUICK DRILL · CBSE CLASS 10

Pair of Linear Equations in Two Variables

Mathematics · Chapter 3 · 15 MCQs · 20 minutes · PYQ-tagged with time budgets

DATE	TOTAL MARKS	DURATION	MARKING	TARGET
_____	15	20 min	+1 / 0	⩾ 12/15

OBJECTIVES

Reinforce the four core topics of Pair of Linear Equations in Two Variables via 15 PYQ-derived MCQs. Identify weak sub-topics via concept-node IDs (see answer key). Build per-question time budget habit.

INSTRUCTIONS

Attempt all 15. Time budget shown per Q (use it as pacing guide). Mark answers (A/B/C/D) in the margin. Answer key + explanations on the last page. **Don't peek — score yourself honestly.**

SECTION · QUICK DRILL

Q 1–15 · 20 MIN

Q1. The pair $x + 2y = 4$ and $2x + 4y = 12$ has:

(A) Unique solution
(B) No solution
(C) Infinitely many solutions
(D) Exactly two solutions

PYQ 2024 · Delhi · 1m · ? 30s

Q2. The pair $2x + 3y = 7$ and $6x + 9y = 21$ has:

(A) Unique solution
(B) No solution
(C) Infinitely many solutions
(D) None of these

PYQ 2023 · Outside Delhi · 1m · ? 30s

Q3. For what value of k does the pair $kx + 2y = 5$ and $3x + y = 1$ have NO solution?

(A) $k = 6$
(B) $k = 3$
(C) $k = 2$
(D) $k = -6$

PYQ 2023 · Outside Delhi · 1m · ? 35s

Q4. If two lines are parallel, the pair of equations has:

(A) Unique solution
(B) Two solutions
(C) No solution
(D) Infinitely many

PYQ 2022 · Delhi · 1m · ? 15s

Q5. The solution of $x + y = 5$, $2x - y = 4$ is:

(A) (3, 2)
(B) (2, 3)
(C) (1, 4)
(D) (4, 1)

PYQ 2020 · Delhi · 1m · ? 30s

Q6. Cross-multiplication method for solving pairs of linear equations is part of the 2025-26 NCERT syllabus.

(A) True
(B) False
(C) Only for word problems
(D) Only for graphical method

PYQ 2024 · Outside Delhi · 1m · ? 25s

Q7. If $3x + 4y = 10$ and $2x - 2y = 2$, then x equals:

(A) 1
(B) 2
(C) 3
(D) 4

PYQ 2024 · Delhi · 1m · ? 35s

Q8. Two lines are coincident when:

(A) $a_1/a_2 \neq b_1/b_2$
(B) $a_1/a_2 = b_1/b_2 \neq c_1/c_2$
(C) $a_1/a_2 = b_1/b_2 = c_1/c_2$
(D) $a_1 = b_1$

PYQ 2019 · Delhi · 1m · ? 20s

Q9. The sum of two numbers is 50 and their difference is 10. The larger number is:

(A) 20
(B) 25
(C) 30
(D) 35

PYQ 2022 · Outside Delhi · 1m · ? 25s

Q10. If $x + y = 5$ and $2x - y = 4$ are plotted, the lines:

(A) Are parallel
(B) Coincide
(C) Intersect at exactly one point
(D) Do not exist

PYQ 2021 · Delhi · 1m · ? 25s

Q11. For $3x - 2y = 4$ and $9x - 6y = 12$, the system has:

(A) Unique solution
(B) No solution
(C) Infinitely many solutions
(D) Exactly two solutions

PYQ 2023 · Delhi · 1m · 30s

Q12. Two pencils and three pens cost ₹38; three pencils and two pens cost ₹42. Cost of one pencil is:

(A) ₹10
(B) ₹6
(C) ₹8
(D) ₹12

PYQ 2020 · Outside Delhi · 1m · 45s

Q13. A consistent system of linear equations means it has:

(A) Exactly one solution only
(B) No solution
(C) At least one solution
(D) Infinitely many solutions only

PYQ 2019 · Outside Delhi · 1m · 20s

Q14. If the pair $ax + 3y = 5$ and $2x + 6y = 10$ has infinite solutions, then a equals:

(A) 1
(B) 2
(C) 3
(D) 5

PYQ 2024 · Delhi · 1m · 35s

Q15. The pair $4x + 5y = 12$ and $8x + 10y = 25$ represents:

(A) Intersecting lines
(B) Coincident lines
(C) Parallel lines
(D) Perpendicular lines

PYQ 2018 · Delhi · 1m · 30s

ANSWER KEY & EXPLANATIONS

Q 1–15 · MARK YOUR SCORE

Q1. Answer: B

Move all to LHS: $x + 2y - 4 = 0$, $2x + 4y - 12 = 0$. Ratios $a_1/a_2 = 1/2$, $b_1/b_2 = 2/4 = 1/2$, $c_1/c_2 = -4/-12 = 1/3$. First two equal, third different ⇒ no solution.

Q2. Answer: C

All three ratios equal 1/3 (move constants to LHS first). Coincident lines ⇒ infinite solutions.

Q3. Answer: A

Standard form: $kx + 2y - 5 = 0$; $3x + y - 1 = 0$. No solution ⇔ $a_1/a_2 = b_1/b_2 \neq c_1/c_2$ ⇒ $k/3 = 2/1$ ⇒ $k = 6$ (c-ratio $5 \neq 2$ ✓).

Q4. Answer: C

Parallel lines never meet, so no (x, y) satisfies both simultaneously.

Q5. Answer: A

Add the two equations: $3x = 9 \Rightarrow x = 3$. Then $y = 5 - 3 = 2$. Verify: $2(3) - 2 = 4$ ✓.

Q6. Answer: B

False. Cross-multiplication has been REMOVED from the 2025-26 rationalised NCERT. Only graphical, substitution, and elimination methods are examinable.

Q7. Answer: B

Multiply eq2 by 2: $4x - 4y = 4$. Add eq1: $7x = 14 \Rightarrow x = 2$.

Q8. Answer: C

Coincident lines are the same line; all three ratios match.

Q9. Answer: C

$x + y = 50$, $x - y = 10$. Add: $2x = 60 \Rightarrow x = 30$ (larger). $y = 20$.

Q10. Answer: C

Slopes are different (−1 vs 2), so lines intersect uniquely.

Q11. Answer: C

Standard form: $3x - 2y - 4 = 0$; $9x - 6y - 12 = 0$. Ratios $3/9 = -2/-6 = -4/-12 = 1/3$. All equal ⇒ infinite.

Q12. Answer: A

Let pencil = x, pen = y. $2x + 3y = 38$, $3x + 2y = 42$. Subtract: $x - y = 4$. Multiply $(x-y=4)$ by 2: $2x - 2y = 8$; subtract from $(2x+3y=38)$: $5y = 30 \Rightarrow y = 6$, $x = 10$.

Q13. Answer: C

'Consistent' includes both unique and infinite-solution cases. Only 'inconsistent' means no solution.

Q14. Answer: A

Infinite ⇒ all three ratios equal. $a/2 = 3/6 = 1/2 \Rightarrow a = 1$. Check c-ratio: $-5/-10 = 1/2$ ✓.

Q15. Answer: C

Ratios $4/8 = 5/10 = 1/2$ but $-12/-25 = 12/25$. First two equal, third different ⇒ parallel.