

CHAPTER-3 | Pair of Linear Equations in two Variables
QUIZ-01

1. What is the condition for a pair of linear equations to have a unique solution?

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

Explanation: If $a_1/a_2 \neq b_1/b_2$, the lines intersect at one point, hence the pair has a unique solution.

2. Which method involves replacing one variable in terms of the other and substituting into another equation?

- A. Graphical Method
 B. Substitution Method
 C. Elimination Method
 D. Cross Multiplication Method (B)

Explanation: Substitution method expresses one variable in terms of another and substitutes it into the second equation.

3. What do coincident lines represent in terms of solutions?

- A. No solution B. Unique solution
 C. Infinitely many solutions
 D. Cannot be determined (C)

Explanation: Coincident lines lie on top of each other and share all points, hence have infinitely many solutions.

4. If $a_1/a_2 = b_1/b_2 \neq c_1/c_2$, what is the nature of the pair of linear equations?

- A. Inconsistent
 B. Consistent with unique solution
 C. Consistent with infinite solutions
 D. Cannot be determined (A)

Explanation: When $a_1/a_2 = b_1/b_2$ but $\neq c_1/c_2$, the lines are parallel and have no solution, making them inconsistent.

5. In the elimination method, what is the first step?

- A. Substitute one variable
 B. Multiply both equations to equalize coefficients
 C. Draw graph
 D. Eliminate constants (B)

Explanation: In the elimination method, we first multiply both equations to make coefficients of one variable equal.

6. What type of graph is obtained when equations are inconsistent?

- A. Intersecting lines B. Parallel lines
 C. Coincident lines D. Circular lines (B)

Explanation: Inconsistent equations have no solution and are represented by parallel lines on the graph.

7. In Champa's problem, what are the equations formed if she buys pants and skirts? Answer: B

- A. $y = 2x$, $y = 4x$
 B. $y = 2x - 2$, $y = 4x - 4$
 C. $y = x - 1$, $y = x + 1$
 D. $y = 3x - 3$, $y = 5x - 5$ (B)

Explanation: The number of skirts is two less than twice and also four less than four times the pants, giving the two equations.

8. What does the graphical method involve?

- A. Solving algebraic expressions
 B. Plotting lines and identifying intersection
 C. Using matrix operations
 D. Calculating derivatives (B)

Explanation: Graphical method requires drawing the lines of the equations and identifying their point of intersection.

9. What kind of statement indicates infinitely many solutions in substitution or elimination methods?

- A. True statement without variable
 B. False equation
 C. Contradiction D. Both A and C (A)

Explanation: If the simplified result is a true statement with no variable, it means the equations have infinite solutions.

10. In Aftab's age problem, what is the final age of his daughter?

- A. 14 years B. 12 years
 C. 10 years D. 8 years (B)

Explanation: Solving the equations $s - 7 = 7(t - 7)$ and $s + 3 = 3(t + 3)$, we get the daughter's age as 12 years.