Mathematics

(Chapter – 3) (Pair of Linear Equations in two Variables) (Practice Test 3)

(Class X)

Time: 1 hour 15 minutes   **M. M: 25**

General Instructions:

1. This question paper contains four sections: A, B, C and D. Each part is compulsory.
2. Section A has 5 MCQ of one mark each.
3. Section B has 3 questions of two marks each.
4. Section C has 3 questions of three marks each.
5. Section D has 2 questions of five marks each, attempt any 1 out of 2.
6. There is no negative marking.

[Section – A]

1. The pair of equations $6x - 10y = 7$ and $-6x + 10y = 9$ have
   (A) A unique solution   (B) infinitely many solutions
   (C) no solution   (D) two solutions

2. The graph of $x = -2$ is a line parallel to the
   (A) x-axis   (B) y-axis
   (C) both x-axis and y-axis   (D) none of these

3. The pair of equation $x = -4$ and $y = -5$ graphically represents lines which are
   (A) intersecting at $(-5, -4)$ (B) intersecting at $(-4, -5)$
   (C) intersecting at $(5, 4)$ (D) intersecting at $(4, 5)$

4. If in the equation $x + 3y = 10$, the value of y is 4, then the value of x will be
   (A) -2 (B) 2
   (C) 4   (D) 5

5. The value of k, for which the system of equations $x + (k + 1) y = 5$ and $(k + 1) x + 9y = 8k - 1$ has infinitely many solutions is
   (A) 2   (B) 3
   (C) 4   (D) 5

[Section – B]

6. Solve for x and y: $x + 2y - 3 = 0$ and $3x - 2y + 7 = 0$.

7. Solve: $99x + 101y = 499$ and $101x + 99y = 501$.

8. For what value of p will the following system of equations have no solution:
   $(2p - 1) x + (p - 1) y = 2p + 1; y + 3x - 1 = 0$

[Section – C]

9. Solve for x and y: $2x = 5y + 4; 3x - 2y + 16 = 0$

10. Determine graphically whether the following pair of linear equations $2x - 3y = 5; 3x + 4y = -1$ has
    (A) a unique solution.
    (B) infinitely many solutions.
    (C) no solution.

11. The owner of a taxi company decides to run all the taxi on CNG fuels instead of petrol/ diesel. The taxi charges in city comprises of fixed charges together with the charge for the distance covered. For a journey of 13 km, the charge paid is ₹129 and for journey of 22 km, the charge paid is ₹210.
    (A) What will a person have to pay for travelling a distance of 32 km?
    (B) Why did he decide to use CNG for his taxi as a fuel?

[Section – D]

12. In a two-digit number, the digit in the unit place is twice of the digit in the tenth place. If the digits are reversed, the new number is 27 more than the given number. Find the number.

13. Solve for x and y:
    $$6(ax + by) = 3a + 2b$$
    $$6(bx - ay) = 3b - 2a$$

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Hints and Answers

Section – A

1. no solution
2. y-axis
3. intersecting at (– 4, – 5)
4. – 2
5. 2

Section - B

6. x = –1, y = 2
7. x = 3 and y = 2
8. p = 2 the system has no solution

Section – C

9. x = – 8 and y = – 4
10. lines intersect at one point (1, – 1) so linear equation have a unique solution
11. (A) x = 12 and y = 9

    (B) He decided to use CNG as its pollution free. It is good for environment and also cheaper in comparison to petrol/diesel.

Section – D

12. 36
13. x = $\frac{1}{2}$ and y = $\frac{1}{3}$