Mathematics

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(Chapter – 3) (Pair of Linear Equations in two Variables) (Practice Test 1)

(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. Jaya has only ₹1 and ₹2 coins with her. If the total number of coins that she has is 50 and the amount of money with her is ₹75, then the number of ₹1 and ₹2 coins are, respectively
   (A) 35 and 15 (B) 35 and 20 (C) 15 and 35 (D) 25 and 25

2. For what value of k, do the equations $3x-y+8=0$ and $6x-ky+16=0$represent coincident lines?
   (A) $\frac{1}{2}$ (B) $-\frac{1}{2}$ (C) 2 (D) – 2

3. If x = a, y = b is the solution of the systems of equation $x-y=2$and $x+y=4$, then the values of a and b, respectively
   (A) 3 and 1 (B) 3 and 5 (C) 5 and 3 (D) –1 and – 3

4. The sum of the digits of a two-digit number is 9. If 27 is added to it, the digits of the number get reversed. The number is
   (A) 25 (B) 72 (C) 63 (D) 36

5. The area of triangle formed by the lines $x=3$, $y=4$ and $x=y$ is
   (A) $\frac{1}{2}$ sq. unit (B) 1 sq. unit (C) 2 sq. unit (D) none of these

[Section – B]

6. Write the value of k for which the system of equations $x+y-4=0$ and $2x+ky-3=0$ has no solutions.

7. Write the value of k for which the system of equations: $2x-y=5$ and $6x+ky=15$ has infinitely many solutions.

8. Draw the graph of $2y=4x-6$, $2x=y+3$and determine whether this system of linear equations has a unique solution or not.

[Section – C]

9. Write the values of k for which the system of equations $x+ky=0$, $2x-y=0$ has unique solution.

10. Solve the following pair of equations for x and y: $\frac{a^2}{x}-\frac{b^2}{y}=0;\frac{a^2b}{x}+\frac{b^2a}{y}=a+b, x\neq 0; y\neq 0$

11. Solve by elimination: $3x=y+5;5x-y=11$

[Section – D]

12. A man earns ₹600 per month more than his wife. One-tenth of the man's salary and l/6th of the wife's salary amount to ₹1,500, which is saved every month. Find their incomes.

13. The sum of the digits of a two-digit number is 8 and the difference between the number and that formed by reversing the digits is 18. Find the number.

Hints and Answers

Section – A

1. 35 and 20
2. 2
3. 3 and 1
4. 36
5. $\frac{1}{2}$ sq. unit

Section - B

6. k = 2
7. k = -3

Section – C

9. $k \neq -\frac{1}{2}$
10. $x = a^2; y = b^2$
11. $x = 3; y = 4$

Section – D

12. Wife's income = ₹5400 and man's income = ₹6000
13. 53