QUESTION BANK

EXERCISE - 1

Q.1 Draw the graph of the system of equations : $x + 2y = 1$; $2x + 3y = 1$

Q.2 Solve the following systems of equations :
(i) $3x + 2y = 5$ & $2x + y = 3$ (ii) $x + 3y = 1$ & $2x + 5y = 1$ (iii) $2x + y = 3$ & $4x + 3y = 8$

Q.3 Solve the following systems of equations by cross multiplication method :
(i) $2x + 5y = 3$; $3x - y = 4$ (ii) $2x + 3y = 3$; $3x - 2y = 2$

Q.4 The sum of two numbers is 49 and their difference is 5. Find the numbers.

Q.5 If 3 tables and 8 chairs together cost Rs. 2036 and 5 tables are 9 chairs together cost Rs. 2843, find the total cost of 1 table and 4 chairs.

EXERCISE - 2

Q.1 A and B each has a certain number of mangoes. A says to B, "If you give me 30 of your mangoes I will have twice as many as left with you." B replies, "If you give me 10, I will have thrice as many as will be left with you." How many mangoes does each of them have ?

Q.2 A fraction reduces to 1/4 when 2 is subtracted from the numerator and 3 is added to the denominator. But it reduces to 2/3 if 6 is added to the numerator and the denominator is multiplied by 3. Find the fraction.

Q.3 Solve : $23x - 29y = 98$ and $29x - 23y = 110$

Q.4 Find the value of k for which the system $2x + 3y = 5$ and $4x + 6y = k$ will have infinitely many solutions.

Q.5 A motorboat takes 7 hours to over 125 km. downstream and 30 km. back. If the motorboat goes 150km. downstream and returns to its starting point in 16 hours, find the speed of the motorboat in still water and the speed of the stream.

Q.6 If $2x + y = 35$, $3x + 4y = 65$ then find x/y.

Q.7 For what value of c the system of equations has infinitely many solutions ?
$cx + 3y - (c - 3) = 0$; $12x + cy - c = 0$

Q.8 The present age of a father is thrice that of his son. 12 years hence father's age will be twice the age of his son. Find their present ages.

Q.9 Solve : $ax + by = 1$ & $bx + ay = \frac{(a+b)^2}{a^2+b^2} - 1$

Q.10 A railways half-ticket costs half the full fare and the reservation charge, which is the same as that on a full ticket. One reserved first-class ticket from Bombay to Delhi costs Rs. 216, and one full and one half first-class reserved tickets cost Rs. 327. What is the basic first-class full fare and what is the reservation charge?

EXERCISE - 3

Fill in the blanks –

Q.1 A linear equation in two variables has ..... solutions.

Q.2 The graph of every linear equation in two variables is a .....

Q.3 $x = 0$ is the equation of the .....axis and $y = 0$ is the equation of the ..... axis.

Q.4 The graph of $x = a$ is a straight line parallel to the .....axis.

Q.5 The graph of $y = a$ is a straight line parallel to the .....axis

Q.6 An equation of the type $y = mx$ represents a line passing through the .....

True-False Statement :

Q.7 An equation of the form $ax + by + c = 0$, where a, b and c are real numbers, such that a and b are both zero, is called a linear equation in two variables.

Q.8 Every solution of the linear equation is a point on the graph of the linear equation.

Q.9 $y = 3x + 5$ has a unique solution.

Q.10 (0, 2) is a solution for $x - 2y = 4$

Q.11 (2, 1/2) is a solution for $x = 4y$

EXERCISE - 4

Q.1 An inconsistent system of two linear equations in two variables will have –
(A) one solution (B) two solutions (C) no solution (D) more than two solutions

Q.2 $\begin{cases} x + y = 0 \\ 2x + 2y = 0 \end{cases}$ has –
(A) no solution (B) one solution (C) two solutions (D) more than two solutions

Q.3 The graphs of $2x + 3y - 6 = 0$, $y = 2/3$, $x = 2$ and $4x - 3y = 6$ intersect in –
(A) four points (B) one point (C) in no point (D) in infinite number of points

Q.4 The present ages of a brother and sister in the ratio of 2 : 3. Ten years hence, the ratio will be 3 : 4, find their present ages.
(A) 30, 40 (B) 24, 36 (C) 20, 30 (D) 24, 32

Q.5 In a picnic there are boys and girls. Fifteen girls leave, then the boys and girls are left in the ratio of 2 : 1. Later 45 boys leave and the ratio changes to 1 : 5. The number of girls in the beginning was –
(A) 40 (B) 43 (C) 29 (D) 50

Q.6 A man can do a piece of work in 30 hours. He and his son together finish it in 20 hours. The son along will finish it in
(A) 60 hours (B) 50 hours (C) 25 hours (D) 10 hours

Q.7 Solving $4x + 3y = 25$ and $5x - 2y = 14$ results in –
(A) $x = 4, y = 3$ (B) $x = 3, y = 4$ (C) $x = 3, y = 3$ (D) $x = 4, y = 4$

Q.8 Yamini and Fatima, two students of class IX of a school , together contributed Rs. 100 towards the Prime Minister's Relief Fund to help the earthquake victims. A linear equation which satisfies this data is –
(A) $x - y = 100$ (B) $x + y = 100$ (C) $x + 2y = 100$ (D) $2x + y = 100$

Q.9 If the point (3, 4) lies on the graph of the equation $3y = ax + 7$, the value of a is –
(A) 5/3 (B) 3/5 (C) 1 (D) 2/5

Q.10 The value of k, if $x = 2$, $y = 1$ is a solution of the equation $2x + 3y$ k is –
(A) 6 (B) 7 (C) 8 (D) 9

Q.11 In some countries, temperature is measured in Fahrenheit, whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius $F = \frac{9}{5}C + 32$, if the temperature is 40°C, what is the temperature in Fahrenheit –
(A) 104° (B) 110° (C) 115° (D) 115°

Q.12 In the above question, if the temperature is 37°F, what is the temperature in Celsius
(A) 25°/2 (B) 25°/9 (C) 25°/6 (D) 25°/6

Q.13 In the above question, a temperature is numerically the same in both Fahrenheit and Celsius is –
(A) – 40° (B) –20° (C) – 15° (D) – 50°

EXERCISE - 5

Match the column–

Each question contains statements given in two columns which have to be matched. Statements (A, B, C, D) in **column I** have to be matched with statements (p, q, r, s) in **column II**.

Q.1 Column II give solution for equation in column I match them correctly –

Column I	**Column II**
(A) $2x + y = 7$	(p) (0, 9)
(B) $x - 2y = 4$	(q) (1, 5)
(C) $x - 4y = 0$	(r) (0, 0)
(D) $px + y = 9$	(s) (4, 0)