QUESTION BANK

EXERCISE - 1

Q.1 Draw the graphs of the equations : $4x - y = 4$ and $4x + y = 12$.

Q.2 Solve the system of equations by elimination method.

$x - 5y = 11$; $2x + 3y = -4$

Q.3 Find the values of x and y in the system of equations.

$ax + by - a + b = 0$; $bx - ay - a - b = 0$

Q.4 Five years ago, Prerna was thrice as old as Kabir. Ten years later, Prerna will be twice as old as Kabir. How old are Prerna and Kabir now ?

Q.5 Sanjay starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was Rs. 4500 after four years of service and Rs. 5400 after 10 years, find his initial salary and annual increment.

Q.6 A person can row 8 km upstream and 24 km downstream in 4 hours. He can row 12 km downstream and 12 km upstream in 4 hours. Find the speed of the person in still water and also the speed of the current.

Q.7 For what value of k, will the following system of equations have an infinite number of solutions ?

$2x - 3y + 10 = 0$, $3x + ky + 15 = 0$

Q.8 Solve the following equations, algebraically : $x + 2y = -1$ and $2x - 3y = 12$

Q.9 Solve graphically the following system of linear equations: $2x + 3y = 9$, $x - y = 2$

Q.10 Determine the values of a and b for which the following system of linear equations has infinitely many solutons:

$3x - (a + 1)\, y = = 2b - 1$, $5x + (1 - 2a)\, y = 3b$

Q.11 If in a reactangle, the length is increased and breadth is reduced each by metres, the area is reduced by 28 sq. metres. If the length is reduced by 1 metre and breadth is increased by 2 metres, the area increases by 33 sq. metres. Find the length and breadth of the rectangle.

Q.12 A man sold a chair and a table together for Rs. 760 thereby making a profit of 25% on chair and 10% on table. By selling them together for Rs. 767.50 he would have made a profit of 10% on the chair and 25% on the table. Find the cost price of each.

Q.13 Solve : $x + 4y = 14$; $7x - 3y = 5$

Q.14 Solve : $9x - 4y = 8$; $13x + 7y = 101$

Q.15 Solve : $3x + 2y + 25 = 0$, $x + y + 15 = 0$

Q.16 Find the value of P for which the given system of equation has only solution (i.e., unique solution)

$Px - y = 2$; $6x - 2y = 3$

Q.17 Find the value of k for which the system of linear equation. $kx + 4y = k - 4$; $16x + ky = k$ has many solution.

Q.18 Find the value of a and b so that the following system of equations have infinitely many solution.

$2x - y = 5$; $(a - 2b)\, x - (a + b)y = 15$

Q.19 The sum of a two digit number and the number obtained by reversing the order of its digits is 165. If the digits differ by 3, find the number.

Q.20 Six years hence, a man's age will be three times the age of his son and three years ago, he was nine times as old as his son. Fin their present ages.

Q.21 A boat goes 12 km. upstream and 40km downstream in 8 hrs. It can go 16 km. upstream and 32 km, downstream in the same time. Find the speed of the boat in still water and the speed of the stream.

Q.22 Ramesh travels 760 km to his home partly by train and partly by car. He takes 8 hr, if he travels 160 km by train and the rest by car. He takes 12 minutes more, if he travels 240 km by train and the rest by car. Find the speed of train and the car.

Q.23 Points A and B are 90 km. apart from each other on a highway. A car starts from Aand another from B at the same time. If they go in the same direction, they meet in 9 hrs. and if they go in opposite directions, they meet in 9/7 hrs. Find their speeds.

Q.24 The perimeter of a rectangle is 40cm. The ratio of its side is 2 : 3. Find its length & breadth.

Q.25 In a cyclic quadrilateral ABCD, $\angle A = (2x + 11)°$, $\angle B = (y + 12)°$, $\angle C = (3y + 6)°$ and $\angle D = (5x - 25)°$ find the angles of the quadrilateral.

Q.26 A vessel contains mixture of 24ℓ milk and 6ℓ water and a second vessel contains a mixture of 15ℓ milk & 10ℓ water. How much mixture of milk and water should be taken from the first and the second vessel separately and kept in a third vessel so that the third vessel may contain a mixture of milk 25ℓ and 10ℓ water ?

Q.27 A lady has 25 p and 50 p coins in her purse. If in all she has 40 coins totalling Rs.12.50, find the number of coins of each type she has.

Q.28 Students of a class are made to stand in rows. If one student is extra in a row, there would be 2 rows less. If one student is less in row, there wouid be 3 rows more. Find the total number of students in the class.

Q.29 A man started his job with a certain monthly salary and earned a fixed increment every year. If his salary was Rs.4500 after 5 years of service and Rs. 5550 after 12 years of service, what was his starting salary and what was his anuual increment.

Q.30 A dealer sold a VCR and a TV for Rs.38560 making a profit of 12% on VCR and 15% on TV. By Selling them for Rs. 38620, he would have realised a profit of 15% on VCR and 12% on TV. Find the cost price of each.

EXERCISE - 2

Fill in the Blanks :

Q.1 If the lines intersect at a point, then that point gives the unique solution of the two equations. In this case, the pair of equations is .....

Q.2 If the lines are parallel, then the pair of equations has no solution. In this case, the pair of equations is .....

Q.3 Five years ago, Nuri was thrice as old as Sonu. Ten years later, Nuri will be twice as old as Sonu. Nuri age is .....

Q.4 5 pencils and 7 pens together cost Rs 50, whereas 7 pencils and 5 pens together cost Rs 46. The cost of one pencil is .....

Q.5 The area of a rectangle gets reduced by 9 square units, if its length is reduced by 5 units and breadth is increased by 3 units. If we increase the length by 3 units and the breadth by 2 units, the area increases by 67 square units. The dimensions of the rectangle are .....

Q.6 A train covered a certain distance at a uniform speed. If the train would have been 10 km/h faster, it would have taken 2 hours less than the scheduled time. And, if the train were slower by 10 km/h; it would have taken 3 hours more than the scheduled time. The distance covered by the train is .....

True-False statements –

Q.7 If a pair of linear equations is given by $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ and $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$.

In this case, the pair of linear equations is consistent.

Q.8 If a pair of linear equations is given by $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ and $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$.

In this case, the pair of linear equations is consistent.

Q.9 If a pair of linear equations is given by $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ and $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$.

In this case, the pair of linear equations is consistent.

Q.10 Every solution of the equation is a point on the line representing it.

Q.11 $3x - y = 3$, $9x - 3y = 9$ has infinite solution

Q.12 $\sqrt{2}x + \sqrt{3}y = 0$, $\sqrt{3}x - \sqrt{8}y = 0$ has no soluton

Q.13 10 students of Class X took part in a Mathematics quiz. If the number of girls is 4 more than the number of boys, find the number of boys and girls who took part in the quiz are 3 and 7 respectively.

Q.14 $3x + 2y = 5, 2x - 3y = 7$ are consistent pair of equation.

Q.15 $2x - 3y = 8, 4x - 6y = 9$ are consistent pair of equation.

Q.16 A part of monthly hostel charges is fixed and the remaining depends on the number of days one has taken food in the mess. When a student A takes food for 20 days she has to pay Rs 1000 as hostel charges whereas a student B, who takes food for 26 days, pays Rs 1180 as hostel charges. Rs. 400 are fixed charges.

Q.17 In a ΔABC, $\angle C = 3 \angle B = 2 (\angle A + \angle B)$, the are angles are 20°, 40°, 100°.

EXERCISE - 3

Q.1 The pair of equations $3^{x+y} = 81, 81^{x-y} = 3$ has –

(A) no solution

(B) the solution $x = 2\frac{1}{2}, y = 2\frac{1}{2}$

(C) the solution $x = 2, y = 2$

(D) the solution $x = 2\frac{1}{8}, y = 1\frac{7}{8}$

Q.2 A can do a piece of work in 24 days. If B is 60% more efficient than A, then the number of days required by B to do the twice as large as the earlier work is –

(A) 24 (B) 36 (C) 15 (D) 30

Q.3 X's salary is half that of Y's. If X got a 50% rise in his salary and Y got 25% rise in his salary, then the percentage increase in combined salaries of both is –

(A) 30 (B) $33\frac{1}{3}$ (C) $37\frac{1}{2}$ (D) 75

Q.4 The points (7, 2) and (–1, 0) lie on a line –

(A) $7y = 3x - 7$ (B) $4y = x + 1$ (C) $y = 7x + 7$ (D) $x = 4y + 1$

Q.5 At present ages of a father and his son are in the ratio 7 : 3, and they will be in the ratio 2 : 1 after 10 years. Then the present age of father (in years) is –

(A) 42 (B) 56 (C) 70 (D) 77

Q.6 A fraction becomes 4 when 1 is added to both the numerator and denominator and it becomes 7 when 1 is subtracted from both the numerator and denominator. The numerator of the given fraction is –

(A) 2 (B) 3 (C) 5 (D) 7

Q.7 A motor boat takes 2 hours to travel a distance 9 km. down the current and it takes 6 hours to travel the same distance against the current. The speed of the boat in still water and that of the current (in km/hour) respectively are –

(A) 3, 1.5 (B) 3, 2 (C) 3.5, 2.5 (D) 3, 1

Q.8 Find the 2 digit number which becomes (5/6)th of itself when its digits are reversed. The difference in the digits of the number being 1.

(A) 45 (B) 54 (C) 36 (D) None of these

Q.9 x & y are 2 different digits. If the sum of the two digit numbers formed by using both the digits is a perfect square, then find x + y.

(A) 10 (B) 11 (C) 12 (D) 13

Q.10 If $3x + 4y : x + 2y = 9 : 4$, then $3x + 5y : 3x - y$ is equal to–

(A) 4 : 1 (B) 1 : 4 (C) 7 : 1 (D) 1 : 7

Q.11 If $|x+3| > 2$, then the only values of x are –

(A) $x > -1$ (B) $x < -1$ (C) $x < -5$ (D) $x > -1$ or $x < -5$

Q.12 In a number of two digits, unit's digit is twice the tens digit. If 36 be added to the number, the digits are reversed. The number is –

(A) 36 (B) 63 (C) 48 (D) 84

Q.13 a, b, c, (a > c) are the three digits, from left to right of a three digit number. If the number with these digits reversed is subtracted from the original number, the resulting number has the digit 4 in its unit's place. The other two digits from left to right are –

(A) 5 and 4 (B) 5 and 9 (C) 4 and 5 (D) 9 and 5

Q.14 A man can row a boat in still water at the rate of 6 km per hour. If the stream flows at the rate of 2 km/hour, he takes half the time going downstream than going upstream the same distance. His average speed for upstream and down stream trip is –

(A) 6 km/hour (B) 16/3 km/hour

(C) Insufficient data to arrive at the answer (D) none of the above

Q.15 A boat travels with a speed of 15 km/h in still water. In a river flowign at 5 km/hr, the boat travels some distance downstream and then returns. The ratio of average speed to the speed in still water is –

(A) 8 : 3 (B) 3 : 8 (C) 8 : 9 (D) 9 : 8

Q.16 Two candles of the same length are lighted at the same time. The first is consumed in 6 hours and the second in 4 hours. Assuming that each candle burns at a constant rate, in how many hours after being lighted was the first candle twice the length of the second –

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

Q.17 Which of the following is not a solution of the pair of equations $3x - 2y = 4$ and $6x - 4y = 8$ –

(A) $x = 2, y = 1$ (B) $x = 4, y = 4$ (C) $x = 6, y = 7$ (D) $x = 5, y = 2$

Q.18 The solution of the pair of equations $2x + 4y = 10$ and $3x + 6y = 12$ is –

(A) $x = 2, y = 1$ (B) $x = -1, y = 4$ (C) $x = 2, y = -2$ (D) no solution

Q.19 Which of the following pairs of equations is inconsistent –

(A) $3x - 2y = 8,\ 2x + 3y = 1$ (B) $3x - y = 8,\ x - \frac{y}{3} = 3$

(C) $\ell x - y = m,\ x + my = \ell$ (D) $5x - y = 10,\ 10x - 2y = 20$

Q.20 The pair of linear equations $ax + by + c = 0$ and $px + qy + r = 0$ will represent parallel lines if –

(A) $\frac{a}{p} \neq \frac{b}{q}$ (B) $\frac{a}{p} = \frac{b}{q}$ (C) $\frac{a}{p} = \frac{b}{q} \neq \frac{c}{r}$ (D) $\frac{a}{p} = \frac{b}{q} = \frac{c}{r}$

Q.21 The solution of the pair of equations $\frac{a}{x} - \frac{b}{y} = 0$ and $\frac{ab^2}{x} + \frac{a^2b}{y} = a^2 + b^2$ is –

(A) $x = a, y = b$ (B) $x = -a, y = b$ (C) $x = a, y = -b$ (D) $x = -a, y = -b$

Q.22 Five years ago, Namita was thrice as old as Mamta. Ten years later, Namita will be twice as old as Mamta. How old is Mamta at present –

(A) 50 years (B) 20 years (C) 30 years (D) 15 years

EXERCISE - 4

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 value of x and y for pair of equation given in column I, match them correctly.

Column I	**Column II**
(A) $2x + y = 8,\ x + 6y = 15$	(p) (3, 4)
(B) $5x + 3y = 35,\ 2x + 4y = 28$	(q) (1/14, 1/6)
(C) $\frac{1}{7x}+\frac{1}{6y}=3,\ \frac{1}{2x}-\frac{1}{3y}=5$	(r) (4, 5)
(D) $15x + 4y = 61$, $4x + 15y = 72$	(s) (3, 2)

Q.2 Column II give pair of two number for solution to in column I, match them correctly.

Column I	**Column II**
(A) Half the perimeter of a rectangular garden, whose length is 4m more than its width, is 36m	(p) (39, 13)
(B) The difference between two numbers is 26 and one number is three times the other.	(q) (40, 10)
(C) Five years hence, the age of Jacob will be three times that of his daughter. Five years ago, Jacob's age was seven times that of his daughter.	(r) (35, 71)
(D) If 1 is added to each of the given two numbers, then their ratio is 1 : 2 . If 5 is subtracted from each of the numbers, then their ratio is 5 : 11.	(s) (20, 16)

Q.3 Match the column

Column I	**Column II**
(A) $5y - 4 = 14,\ y - 2x = 1$	(p) Infinite solutions
(B) $6x - 3y + 10 = 0,\quad 2x - y + 9 = 0$	(q) Consistent
(C) $3x - 2y = 4,\ 9x - 6y = 12$	(r) No solution
(D) $2x - 3y = 8,\ 4x - 6y = 9$	(s) Inconsistent

EXERCISE - 5

PREVIOUS YEARS COMPETITIVE PROBLEMS

Q.1 For the given pair (x, y) of positive intergers, such that $4x - 17y = 1$ and $x \le 1000$, how many integer values of y satisfy the given conditions –

(A) 55 (B) 56 (C) 57 (D) 58

Q.2 If x and y are integers then the equation $5x + 19y = 64$ has –

(A) no solution for $x < 300$ and $y < 0$ (B) no solution for $x > 250$ and $y > -100$

(C) a solution for $250 < x < 300$ (D) a solution for $-59 < y < -56$

Q.3 The total number of integer pairs (x, y) satisfying the equation $x + y = xy$ is –

(A) 0 (B) 1 (C) 2 (D) None of these

Direction (Q.4-Q.5) : Answer the questions based on the following information.

Each of these items has a question followed by two statements, I and II. Mark the answer.

Choose 1. If the question can be answered with the help of statement I alone

Choose 2. If the question can be answered with the help of statement II alone

Choose 3. If both statement I and statement II are need to answer the question.
Choose 4. If the question cannot be answered even with the help of both the statements.

Q.4 Given that X and Y are non-negative. What is the value of X –
I. $2X + 2Y \leq 40$ II. $X - 2Y \geq 20$
(A) 1 (B) 2 (C) 3 (D) 4

Q.5 What are the values of x and y –
I. $3x + 2y = 45$ II. $10.5x + 7y = 157.5$
(A) 1 (B) 2 (C) 3 (D) 4

EXERCISE - 6

PREVIOUS YEARS BOARD QUESTIONS

Q.1 Find the value of k for which the system of equations has no solution :
$3x - 4y + 7 = 0$, $kx + 3y - 5 = 0$

Q.2 Find the value of k for which the system of equations has a unique solution :
$x - ky = 2$, $3x + 2y = -5$

Q.3 Determine k for which the system of equations has infinite solutions :
$4x + y = 3$, $8x + 2y = 5k$.

Q.4 Determine the value k for which the following system of equations has a unique solutions :
$2x - 3y = 1$, $kx + 5y = 7$

Q.5 Determine, by drawing graphs, whether the following system of linear equations has a unique solution or not :
$2x - 3y = 6$, $x + y = 1$

Q.6 For wat value of k will the system of linear equations have infinite number of solutions :
$kx + 4y = k - 4$, $16x + ky = k$?

Q.7 Determine the value of c for which the following system of linear equations has no solution :
$cx + 3y = 3$, $12x + cy = 6$.

Q.8 For what value of k, the following system of equations has (i) a unique solution (ii) no solution.
$2x + ky = 1$, $3x - 5y = 7$?

Q.9 Find the value of k for which the system of equations
$8x + 5y = 9$, $kx + 10y = 15$ has no solution.

Q.10 For what value of k will the following system of equations have infinite solutions :
$2x + 3y = 4$, $(k + 2)x + 6y = 3k + 2$

Q.11 For what value of k will the following system of linear equations have no solution :
$3x + y = 1$, $(2k - 1)x + (k - 1)y = 2k + 1$

Q.12 Find the values of p and q for which the following system of linear equations has infinite number of solutions :
$2x - y = 5$, $(p + q)x + (2p - q)y = 15$

Q.13 Find the values of α and β for which the following system of linear equations has infinite number of solutions :
$2x + 3y = 7$, $2\alpha x + (\alpha + \beta)y = 28$

Q.14 For what value of a and b, following system of linear equations have an infinite number of solutions :
$(2a - 1)x - 3y = 5$, $3x + (b - 2)y = 3$.

Q.15 Find the values of a and b for which the following system of linear equations has infinite number of solutions :
$2x - 3y = 7$, $(a + b)x - (a + b - 3)y = 4a + b$.

Q.16 For what value of a, the system of linear equations $ax + 3y = a - 3$, $12x + ay = a$ has no solution.

Q.17 Find the value of k for which the following system of linear equations has infinite number of solutions :
$x + (k + 1)y = 5$, $(k + 1)x + 9y = 8k - 1$

Q.18 Solve the following system of linear equations :
$2(ax - by) + (a + 4b) = 0$
$2(bx + ay) + (b - 4a) = 0$

Q.19 If $(x-4)$ is a factor of $x^3 + ax^2 + 2bx - 24$ and $a - b = 8$, find the values of a and b.

Q.20 If $(x+3)$ is a factor of $x^3 + ax^3 - bx + 6$ and $a + b = 7$, find the values of a and b.

Q.21 If $(x+2)$ is a factor of $x^3 + ax^2 + 4bx + 12$ and $a + b = -4$, find the values of a and b.

Q.22 Solve for x and y : $\frac{2}{3}x + \frac{3}{y} = 13,\ \frac{5}{x} - \frac{4}{y} = -2,\ x, y \neq 0$

Q.23 If $(x-2)$ is a factor of $x^3 + ax^2 + bx + 18$ and $a - b = 7$, find a and b.

Q.24 Solve the following system of linear equations :
$ax + by = a - b,\ bx - ay = a + b.$

Q.25 Solve for x and y :
$47x + 31y = 63,\ 31x + 47y = 15$

Q.26 Solve the system of equations : $\frac{bx}{a} - \frac{ay}{b} + a + b = 0$ and $bx - ay + 2ab = 0$

Q.27 Solve the following equations for x and y : $mx - ny = m^2 + n^2$ and $x + y = 2n$

Q.28 Solve the following equations for x and y :

$$\frac{a^2}{x} - \frac{b^2}{y} = 0\ ,\quad \frac{a^2 b}{x} + \frac{b^2 a}{y} = a + b,\ x, y \neq 0$$

Q.29 Solve for x and y : $x + \frac{6}{y} = 6,\ 3x - \frac{8}{y} = 5$

Q.30 Solve for x and y : $8x - 9y = 6xy,\ 10x + 6y = 19\,xy$

Q.31 Solve graphically for x and y :
$2x + 3y = 12,\ x - y = 1.$ Shade the region between the two lines and x-axis.

Q.32 A man travels 600 km partly by train and partly by car. If he covers 400 km by train and the rest by car, it takes him 6 hours and 30 minutes. But if he travels 200 km by train and 30 minutes. But if he travels 200 km by train and rest by car, he takes half an hour longer. Find the speed of the train and that of the car.

Q.33 Solve the following system of linear equations graphically : $x - y = 1,\ 2x + y = 8.$
Shade the area bounded by these two lines and the y-axis.

Q.34 A man travels 370 km. partly by train and partly by car. If he covers 250 km. by train and the rest by car it takes him 4 hours. But if he travels 130 km. by train and the rest by car, he takes 18 minutes longer. Find the speed of the train and that of the car.

Q.35 Draw the graph of $x - y + 1 = 0$ and $2x + y - 10 = 0$. Calculate the area bounded by these lines and x-axis.

Q.36 Places A and B are 80 km apart from each other on a highway. A car starts from A and another starts from B at the same time. If they move in the same direction, they meet in 8 hours and if they move in opposite directons they meet in 1 hour and 20 minutes. Find the speed of the cars.

Q.37 Solve the following system of linear equations graphically : $2x - 3y = 1,\ 3x - 4y = 1.$
Does the point (3, 2) lie on any of the lines ? Write its equation.

Q.38 Solve for x and y : $\frac{4}{x} + 5y = 7,\ \frac{3}{x} + 4y = 5$.

Q.39 Solve the following system of linear equations graphically : $3x - 5y = 19,\ 3y - 7x + 1 = 0$
Does the point (4, 9) lie on any of the lines ? Write its equations.

Q.40 The sum of numerator and denominator of a fraction is 8. IF 3 is added to both the numerator and denominator the fraction becomes 3/4. Find the fraction.

Q.41 The monthly incomes of A and B are in the ratio of 9 : 7 and their monthly expenditures are in the ratio of 4 : 3. If each saves Rs. 1600 per month, find the monthly income of each.

Q.42 Solve the following system of linear equations graphically: $x + 2y = 5,\ 2x - 3y = -4$
Also find the points where the lines meet the x-axis.

Q.43 Solve the following system of linear equations graphically: $2x - y = 4,\ 3y - x = 3$
Find the points where the lines meet the y-axis.

Q.44 Solve the following system of equations graphically : $3x - y = 3,\ x - 2y = -4$
Shade the area of the region bounded by the lines and x-axis.

Q.45 Draw the graphs of the equations : $4x - y - 8 = 0$ and $2x - 3y + 6 = 0$
Also determine the vertices of the trianlge formed by the lines and x-axis.

Q.46 Draw the graphs of the following equations
$3x - 4y + 6 = 0$ and $3x + y - 9 = 0$
Also determine the coordinates of the vertices of the trianlge formed by these lines and the x-axis.

Q.47 Solve the following system of linear equations graphically :
$3x - 2y - 1 = 0,\ 2x - 3y + 6 = 0$
Shade the region bounded by the lines and x-axis.

Q.48 Solve the following system of equations graphically for x and y :
$3x + 2y = 12,\ 5x - 2y = 4$
Find the coordinates of the points where the lines meet the y-axis

Q.49 Solve the following system of equations graphically :
$2x + 3y = 8,\ x + 4y = 9$

Q.50 Solve the following system of linear equations graphically :
$2x + 3y = 12,\ 2y - 1 = x$

ANSWER KEY

EXERCISE - 1

(2) $x = 1$ and $y = -2$ **(3)** -1
(4) Prerna's age = 50 years and Shelly's age = 20 years. **(5)** Initial salary = Rs. 3900 and increment = Rs. 150
(6) $x = 8$ km/hr and $y = 4$ km/hr. **(7)** $-9/2$ **(8)** $x = 3$ **(10)** $a = 8,\ b = 5$
(11) Length of the rectangle = 23 metres and Breadth of the rectangles = 11 metres
(12) Cost of 1 chair = Rs. 300 and Cost of 1 table = Rs. 350
(13) $x = 2,\ y = 3$ **(14)** $x = 4,\ y = 7$ **(15)** $x = 5,\ y = -20$
(16) P can have all real values except 3. **(17)** $k = 8$ is correct value for many solution.
(18) $a = 4,\ b = -1$ **(19)** 69.96 **(20)** $x = 30,\ y = 6$
(21) x = Speed of boat = 6 km/hr. ; y = Speed of stream = 2 km/hr.
(22) $x = 80$ km/hr and $y = 100$ km/hr.
(23) Speed of car A = 40 km/hr & speed of car B = 30 km/hr.
(24) Length be 12cm. & breadth be 8cm. **(25)** $\angle A = 75°,\ \angle B = 45°,\ \angle C = 105°,\ \angle D = 135°$
(26) $x = 20\ell$ and $y = 15\ell$ **(27)** $x = 30$ (25 P coins) & $y = 10$ (50 P coins)
(28) 60 **(29)** x = Rs. 3750, y = Rs. 150
(30) x = Rs. 18000 & y = Rs. 16000.