

CLASS X – MATHEMATICS – CHAPTER 03

PAIR OF LINEAR EQUATION

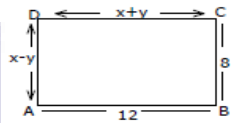
Name: _____

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- Q01.** A pair of Linear equation in two variables which has a common point i.e which has only one solution is called a
(a) Consistent pair (b) Inconsistent pair (c) Dependent pair (d) None of these
- Q02.** If a pair of linear equation $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ represents coincident lines, then
(a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ (b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ (c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ (d) None of these.
- Q03.** The value of 'k' for which the system of equation $2x+3y = 5$ and $4x+ky = 10$ has infinite number of solutions is
(a) $k = 1$ (b) $k = 3$ (c) $k = 6$ (d) $k = 0$
- Q04.** If the system of equation $2x + 3y = 7$ and $29x + (a + b)y = 28$ has infinitely many solution then
(a) $a = 2b$ (b) $b = 2a$ (c) $a+2b = 0$ (d) $2a+ b = 0$
- Q05.** A system of simultaneous linear equations is said to be inconsistent, if it has: –
(a) One solution (b) Two solutions (c) Three solution (d) No solution
- Q06.** The system of equation $2x + 3y - 7 = 0$ and $6x + 5y - 11 = 0$ has
(a) unique solution (b) No solution (c) Infinitely many sol. (d) None of these
- Q07.** The value of 'k' for which the system of equation $x+2y - 3=0$ and $5x+ky+7=0$ has no solutions is
(a) $k = 10$ (b) $k = 6$ (c) $k = 3$ (d) $k = 1$
- Q08.** The equation $ax^n + by^n + c = 0$ represents a straight-line if
(a) $n \geq 1$ (b) $n \leq 1$ (c) $n = 1$ (d) None of these
- Q09.** The value of 'k' for which the system of equation $kx - y = 2$ and $6x - 2y = 3$ has a unique solution is
(a) $k = 3$ (b) $k \neq 3$ (c) $k = 0$ (d) $k \neq 0$
- Q10.** The value of 'k' for which the system of equations $x + 2y = 5$ and $3x + ky + 15 = 0$ has no solutions if
(a) $k = 6$ (b) $k = -6$ (c) $-k = 32$ (d) None of these
- Q11.** In the equation $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ if $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ then the equation will represent
(a) coincident lines (b) parallel lines (c) intersecting lines (d) None of these
- Q12.** The graphical representation of the linear equation $y - 5 = 0$ is
(a) A line (b) A point (c) A curve (d) None of these

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- Q13.** The value of 'k' for which the system of equation $3x + 5y = 0$ and $kx + 10y = 0$ has a non-zero solution is
(a) $k = 0$ (b) $k = 2$ (c) $k = 6$ (d) $k = 8$
- Q14.** If a paired linear equation $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ represents parallel linear then
(a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ (b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ (c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ (d) None of these.
- Q15.** If $am \neq bl$, then the system of equation $ax + by = c$ and $lx + my = n$
(a) Has a unique solution (b) Has no solution
(c) Infinitely many solutions (d) May or may not have a solution.
- Q01.** The cost of two kg of apples and 1kg of grapes on a day was found to be Rs 160. After a month the cost of 4kg apples and 2kg grapes is Rs 300. Represent the situation algebraically and graphically.
- Q02.** Find the value of 'k' for which the system of equation $kx + 3y = k - 3$ and $12x + ky = k$ will have no solution.
- Q03.** ABCD is a rectangle find the values of x and y.
- Q04.** Can $(x - 2)$ be the remainder on division of a polynomial $p(x)$ by $(2x+3)$? Justify your answer.
- Q05.** Solve the following system of equation graphically. $x + 2y = 1$, $x - 2y = -7$ also read the points from the graph where the lines meet the x - axis and y - axis.
- Q06.** A man has only 20 paise coins and 25 paise coins in his purse. If he has 50 coins in all totalling ₹11.25. How many coins of each kind does he have?
- Q07.** A says to B "my present age is Five times your that age when I was an old as you are now. It the sum of their present ages is 48 years, find their present ages.
- Q08.** A boat goes 30 km upstream and 44 km downstream in 10 hours. In 13 hours, it can go 40km upstream and 55 km downstream. Determined the speed of the stream and that of the boat in still water.
- Q09.** The path of a train A is given by the equation $x + 2y - 4 = 0$ and the path of another train B is given by the equation $2x + 4y - 12=0$ represent this situation Graphically.
- Q10.** For what value of 'a' the system of linear equations $ax + 3y = a - 3$, $12x + ay = a$ has no solution.
- Q11.** Find the values of 'a' and 'b' for which the following system of linear equations has infinite number of Solution: $2x + 3y = 7$, $(a + b + 1)x + (a + 2b + 2)y = 4(a + b) + 1$
- Q12.** Draw graphs of the equations on the same graph paper $2x + 3y = 12$, $x - y = 1$. Find the area and Co- ordinate of the vertices of the triangle formed by the two straight lines and the y - axis.
- Q13.** A taken 3 hours more than B to walk a distance of 30km. But if A doubles his speed, he is ahead of B by $\frac{3}{2}$ hours. Find their original speed.



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- Q14.** The sum of a two-digit number and the number obtained by reversing the order of digits is 99. If the digits differ by 3, find the number.
- Q15.** In a cyclic quadrilateral ABCD, $\angle A = (2x + 4)^\circ$, $\angle B = (y + 3)^\circ$, $\angle C = (2y + 10)^\circ$ and $\angle D = (4x - 5)^\circ$. Find the four angles.
- Q16.** Solve Graphically $2x - 3y + 13 = 0$ and $3x - 2y + 12 = 0$
- Q17.** Find the values of α and β for which the following system of linear equation has infinite number of solution, $2x + 3y = 7$, $2\alpha x + (\alpha + \beta)y = 28$
- Q18.** Find the condition for which the system of equations $\frac{x}{a} + \frac{y}{b} = c$ and $bx + ay = 4ab$ ($a, b \neq 0$) is inconsistent.
- Q19.** Draw the graph of $x + 2y - 7 = 0$ and $2x - y - 4 = 0$. Shade the area bounded by the lines and y - axis.
- Q20.** A two-digit number is obtained by either multiplying the sum of the digits by 8 and adding 1 Or by multiplying the difference of the digits by 14 and subtract 1. How many such numbers are there?
- Q21.** A leading library has a fixed charge for the first three days and an additional change for each day thereafter Sarika paid ₹27 for a book kept for seven days while Sarika paid ₹21 for the book she kept for five days find the fixed charge and the charge for each extra day.
- Q22.** If 2 is added to the numerator of a fraction, it reduces to $\frac{1}{2}$ and if 1 is subtracted from the denominator, it reduces to $\frac{1}{3}$. Find the fraction.
- Q23.** Abdul travelled 300km by train and 200km by Taxi, it took him 5 hours 30 minutes. But if he travels 260km by Train and 240km by Taxi he takes 6 minutes longer, Find the speed of the train and that of the taxi.
- Q24.** Given the linear equation $2x + 3y - 8 = 0$ write another linear equation in two variable such that the geometrical representation of the pair so formed is
(a) intersecting lines (b) Parallel lines (c) Overlapping
- Q25.** Find the value of 'k' for which the system of equation has infinitely many solutions:
 $2x + (k - 2)y = k$ and $6x + (2k - 1)y = 2k + 5$
- Q26.** Find the relation between a, b, c and d for which the equations $ax + by = c$ and $cx + dy = a$ have a unique solution
- Q27.** Determine graphically the coordinates of the vertices of the triangle the equation of whose sides are $y = x$, $3y = x$, $x + y = 8$.
- Q28.** Father's age is three times the sum of ages of his two children. After 5 years his age will be twice the sum of ages of two children. Find the age of father.
- Q29.** On selling a T.V. at 5% gain and a fridge at 10% gain shopkeeper gains ₹2000. But if he sells the T.V at 10% gain and the Fridge at 5% loss, he gains ₹1500 on the transaction. Find the actual price of TV and Fridges.
- Q30.** If in a rectangle the length is increased and breadth is decreased by 2 units each. The area is reduced by 28 square units, if the length is reduced by 1 unit and breadth is increased by 2 units, the Area increased by 33 sq units. Find the dimensions of the rectangle.

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Q31. Find the value of ' α ' so that the following linear equation have no solution

$$(3\alpha + 1)x + 3y - 2 = 0, (\alpha^2 + 1)x + (\alpha - 2)y - 5 = 0$$

Q32. Solve $\frac{2}{3x+2y} + \frac{3}{3x-2y} = \frac{1}{2}$ and $\frac{5}{3x+2y} + \frac{1}{3x-2y} = 2$

Q33. Solve for ' x ' and ' y ' where $[x + y = a - b]$ and $[ax - by = a^2 + b^2]$

Q34. Solve for x and y $[ax + by = a - b]$ and $[bx - ay = a + b]$

Q35. Solve $[23x - 29y = 98]$ and $[29x - 23y = 110]$

Q36. Solve for ' x ' and ' y '

(i) $[(a - b)x + (a + b)y] = [a^2 - b^2 - 2ab]$

(ii) $[(a + b)(x + y) = a^2 + b^2]$

