

UNIT-2: PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

1.
 - a) What is the general form of pair of linear equations in two variables?
 - b) The general form of pair of linear equations with two variables is
 - c) Which of the following represents pair of linear equations with two variables?
 - a) $x+y = 4, 3x+3y = 12$
 - b) $x-y = 4-y, 2x-y = 8-y$
2.
 - a) which condition represents the pair of equations to be $(a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0)$ intersecting lines?
 - b) Write down the condition which represents the pair of linear equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ has only one solution or unique solution.
 - c) Write down the condition which represents the pair of linear equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ are consistent pair with only one solution or unique solution.
3.
 - a) What is the condition which represents the pair of equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ to be parallel lines?
 - b) Write down the condition which represents the pair of linear equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ has no solution.
 - c) Write down the condition which represents the pair of linear equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ are inconsistent pair.
4.
 - a) What is the condition which represents the pair of equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ are co-incident lines?
 - b) Write down the condition which represents the pair of linear equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ has infinitely many solutions.
 - c) Write down the condition which represents the pair of linear equations $a_1x+b_1y+c_1 = 0$ and $a_2x+b_2y+c_2 = 0$ are dependent and consistent pair.

5. a) Write down the values of $a_1, b_1, c_1, a_2, b_2, c_2$ of the equations $x + 3y = 4$ and $2x - 5y = 3$.
- b) Write the ratios, of the pair of linear equations $x + 3y = 4$ and $2x - 5y = 3$.
6. a) Find out which type of lines does the equations $2x+y = 6$ and $2x-y=2$ represents.
- b) Verify whether the equations $2x+y = 6$ and $2x-y = 2$ represents intersecting lines.
- c) Verify whether the pair of equations $2x+y = 6$ and $2x-y = 2$ has a unique solution.
- d) Find out how many solutions does the pair of linear equations $2x+y=6$ and $2x-y = 2$ has.
- e) On comparing the ratio, find out whether the lines representing the equations $2x+y = 6$ and $2x-y = 2$ intersect at a point or parallel or coincident.
7. a) On comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the lines representing the equations $6x-3y+10 = 0$ and $2x-y+9 = 0$ intersect at a point or parallel or coincident.
- b) On comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out the pair of equations are consistent or inconsistent?
- c) Write down the values of $a_1, b_1, c_1, a_2, b_2, c_2$ of the pair of equations in two variables $6x-3y+10 = 0$ and $2x-y+9 = 0$.
- d) Verify whether the pair of equations in two variables $6x-3y+10=0$ and $2x-y+9 = 0$ represents parallel lines or not.
- e) Find out how many solutions does the pair of linear equations $6x-3y+10 = 0$ and $2x-y+9 = 0$ has.
8. a) On comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out which type of lines does the Equations $9x+3y+12 = 0$ and $18x+6y+24 = 0$ represents.
- b) On comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, verify whether the pair of

equations $9x+3y+12 = 0$ and $8x+6y+24 = 0$ represents dependent pair of equations.

- c) Verify that the pair of equations $9x+3y+12 = 0$ and $18x+6y+24 = 0$ represents coincident lines.
 - d) Find out how many solutions does the pair of linear equations $9x+3y+12 = 0$ and $18x+6y+24 = 0$ has.
- 9.
- a) Solve: $3x+4y = 10$ and $2x-2y = 2$.
 - b) Find the values of x and y of the equations: $3x+4y = 10$ and $2x-2y = 2$.
 - c) Solve the pair of equations $3x+4y = 10$ and $2x-2y = 2$ by elimination method.
- 10.
- a) Solve: $x + y = 14$ and $x-y = 4$.
 - b) Find the values of x and y of the equations: $x + y = 14$ and $x-y = 4$.
 - c) Solve the pair of equations $x + y = 14$ and $x-y = 4$ by substitution method.
- 11.
- a) Solve: $2x + y = 5$ and $3x+2y = 8$.
 - b) Find the values of x and y of the equations: $2x + y=5$ and $3x+2y=8$.
 - c) Solve the pair of equations $2x + y = 5$ and $3x+2y = 8$ by cross multiplication method.
 - d) Find the solutions of the pair of equations $2x + y = 5$ and $3x+2y=8$.
- 12.
- a) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that The geometric representation of the pair so formed are intersecting lines.
 - b) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that they are consistent pair.
 - c) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that they have unique solution.
- 13.
- a) Given the linear equation $2x+3y-8 = 0$, write another equation in

two variables such that the geometric representation of the pair so formed is parallel lines.

- b) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that they are inconsistent pair.
 - c) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that they have no solutions.
- 14.
- a) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that the geometric representation of the pair so formed is coinciding lines.
 - b) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that they are consistent and dependent pair.
 - c) Given the linear equation $2x+3y-8 = 0$, write another equation in two variables such that they have infinitely many solutions.
- 15.
- a) Solve graphically: $x+3y = 6$, $2x-3y = 12$.
 - b) Draw the graph of the equations $x+3y = 6$ and $2x-3y = 12$ and find the values of x and y .
 - c) Check graphically whether the pair of equations $x+3y = 6$, $2x+3y = 12$ is consistent. If so solve them graphically.
 - d) Graphically, find out whether the pair of equations $x+3y = 6$, $2x+3y = 12$ has no solution, unique solution or infinitely many solutions.
16. A) The sum of the two number is 20 and their difference is 04 then find those two numbers. Represent this situation algebraically and solve using elimination method.

Alternate Questions:

B) $x + y = 20$ and $x - y = 04$

If these pair of linear equations are consistent then represent them graphically and hence find the values of x and y .

C) $x + y = 20$

$x - y = 04$ The graphical representation of these pair of simultaneous linear equation gives which type of lines? How many solutions are there? If it has unique (only one) solution then solve graphically.

D) $x + y = 20$

$x - y = 04$ These equations have how many solutions? If it has unique solution then solve by using elimination method.

E) $x + y = 20$

$x - y = 04$ Find the values of i) x ii) y iii) x and y

F) $x + y = 20$

$x - y = 04$ Solve using elimination method and hence find the value of 'm' in $y = mx + 3$.

G) Twenty students of class X took part in Mathematics quiz. If the number of girls is 04 more than the number of boys, then find the number of girls and boys who participated in the quiz. Represent this situation algebraically and graphically.

H) Points A and B are 20 km apart. A car starts from 'A' and another car starts from 'B' simultaneously,

i) If they travel towards each other they meet in one hour.

ii) If they travel in same direction, they meet in 5 hours, then find the speed of the cars.

D) Whether $x = 12$ and $y = 8$ is the solution for the pair of linear equations $x + y = 20$ and $x - y = 4$? Check how many solutions are there for the above pair of equations?