



MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

PAIR OF LINEAR EQUATION IN TWO VARIABLES

Example

1. If 7 be added to the sum of the digits of a certain number consisting of two digits, the result will be three times the number in the ten's place. But if 18 be subtracted from the number, the digits will be interchanged. Find the numbers.



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2. If 2 be added to the sum of the digits of a certain number consisting of two digits, the

result will be two times the number in ten's place. But if 18 be subtracted from the number, the digits will be interchanged. Find the number.



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3. If 4 be added with four times of the digit of the unit place of a certain number consisting of two digits, the result will be two times of the sum of the digits. But if 18 be subtracted

from the number, the digit will be interchanged. Find the number.



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4. Find the value of k for which the pair of linear equation $kx + 3y = k - 2$ and $12x + ky = k$ has no solution.



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Exercise

1. Form the equation from the following:

The sum of the digit number is 12. If the position of the two digits are interchanged, the number so formed is smaller than the original number by 18. Find the number.



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2. Form the equation from the following:

In an examination 41 students out of 68 were passed. If 5 boys out of 8 and 7 girls out of 12

come out successful then find the number of boys and girls.



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3. Form the equation from the following:

The difference between two numbers is 53. By dividing the greater number by the smaller one we get 5 as quotient and 5 as remainder.

Find the two numbers.



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4. Form the equation from the following:

The age of A is twice that of B. 8 years hence their age will be in ratio 7:4. Find their present age.



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5. Form the equation from the following:

The sum of the father's age and two times the son's age is 70 years. Also the sum of the son's age and two times father's age is 95 years. Find the age of father and son.



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6. Form the equation from the following:

The difference between length and breadth of a room is $3m$ and its area is 270 Sq.m. Find the length and breadth of the room.



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7. By graphical method find whether the following pair of equations are consistent or

not. If consistent, solve

$$x + y = 3, 3x + 3y = 9$$



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8. By graphical method find whether the following pair of equations are consistent or not. If consistent, solve

$$x - 2y = -3, 2x + y = 4$$



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9. By graphical method find whether the following pair of equations are consistent or not. If consistent, solve

$$x - y = 1, 4x - 4y = 4$$



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10. By graphical method find whether the following pair of equations are consistent or not. If consistent, solve

$$2x + 4y = 10, 3x + 6y = 12$$





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11. Draw the graph of the following equation and determine the vertices of the triangle formed by the lines with y -axis.

$$x - y = 1, 2x + 3y = 12$$



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12. Draw the graph of the following equation and determine the vertices of the triangle

formed by the lines with y-axis.

$$3x + y - 5 = 0, 2x - y - 5 = 0$$



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13. Draw the graph of the following equation and determine the vertices of the triangle formed by the lines with y-axis.

$$2x - y = 1, x + 2y = 13$$



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14. Draw the graph of the following equation and determine the vertices of the triangle.

$$y = x, y = 2x, x + y = 6$$



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15. Draw the graph of the following equation and determine the vertices of the triangle.

$$x - y + 1 = 0, 3x + 2y - 12 = 0, y = 0$$



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16. For what value of p , the following system of linear equation has no solution.

$$px + 3y = p - 2, 12x + py = p$$



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17. For what value of p , the following system of linear equation has no solution.

$$x + 2y = 5, 3x + py = -15$$



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18. For what value of p , the following system of linear equation has no solution.

$$2x + py = 1, 3x - 5y = 7$$



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19. For what value of p , the following system of linear equation has infinitely many solutions.

$$2x + 3y = 2, (p + 2)x + (2p + 1)y = 2(p - 1)$$



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20. For what value of p , the following system of linear equation has infinitely many solutions.

$$2x + 3y = 7, (p + 1)x + (2p - 1)y = 4p + 1$$



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21. For what value of p , the following system of linear equation has infinitely many solutions.

$$(p - 1)x - y = 5, (p + 1)x + (1 - p)y = 3p + 1$$



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22. Find the values of a and b for which the following system of linear equation has infinitely many solutions.

$$2x - (2a + 5)y = 5, (2b + 1)x - 9y = 15$$



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23. Find the values of a and b for which the following system of linear equation has infinitely many solutions.

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



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24. Find the values of a and b for which the following system of linear equation has infinitely many solutions.

$$(a - 1)x + 3y = 2, 6x + (1 - 2b)y = 6$$



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