



## MATHS

## BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

# ALGEBRIC METHOD OF SOLVING A PAIR OF LINEAR EQUATIONS



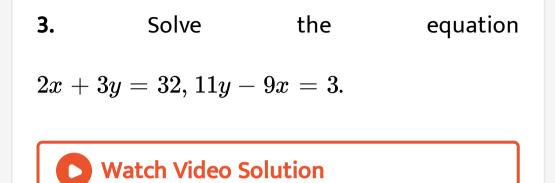
**1.** Solve the pair of equations.

$$7x - 5y - 11 = 0, 3x + 2y - 13 = 0$$

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2. A and B has a number of mangoes. A says to B "If you give me 30 of your mangoes, my number will be twice of yours". B replies "If you give me 10, my number will be thrice of yours". How many mangoes each has?





**4.** If 2 is subtracted from the denominator of a fraction, the it becomes  $\frac{1}{2}$ . If 3 is added to the numerators, Then it becomes  $\frac{2}{3}$ . Find the fraction.



1. Solve by the method of elimination:

5x - 3y = 1, 2x + 5y = 19

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**2.** Solve by the method of elimination:

3x + 4y = 7, 5x - 8y = 8

3. Solve by the method of elimination:

$$5x - 3y = 16, 3x - y = 12$$



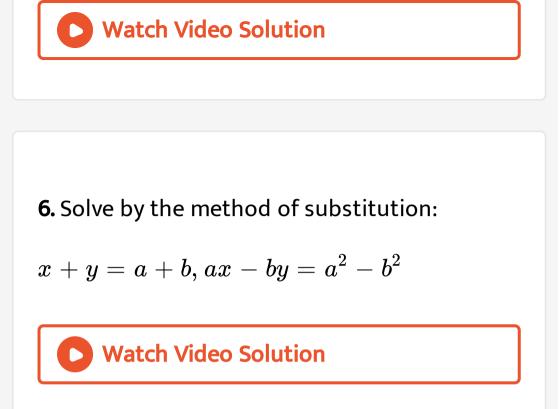
**4.** Solve by the method of substitution:

2x + 3y = 31, 17x - 11y = 8

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5. Solve by the method of substitution:

$$ax + by = 1, bx + ay = rac{{{\left( {a + b} 
ight)}^2}}{{{a^2} + {b^2}}} - 1$$



7. Solve by the method of cross multiplication:

8x + 3y = 1, 7x + 4y = -6

8. Solve by the method of cross multiplication:

#### 2x + y = 35, 3x + 4y = 65



9. Solve by the method of cross multiplication:

ax + by = a - b, bx - ay = a + b

$$rac{xy}{x+y}=rac{6}{5}, rac{xy}{y-x}=6$$

11. Solve by any method:
$$rac{x+y}{xy}=1, rac{x-y}{xy}=65$$



$$x + 2y = 1.3, \, rac{3}{2x + 5y} = 1$$

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#### **13.** Solve by any method:

31x + 43y = 117, 43x + 31y = 105

148x + 231y = 527, 231x + 148y = 610

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#### **15.** Solve by any method:

ax + by = c, bx + ay = 1 + c

$$x + 5y = 36, \frac{x + y}{x - y} = \frac{5}{3}$$

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17. Solve by any method:
$$x-y=0.9,\,rac{11}{2(x+y)}=1$$

$$rac{x}{a}+rac{y}{b}=a+b,\,rac{x}{a^2}+rac{y}{b^2}=2$$

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**19.** Solve by any method:

$$rac{x}{a}+rac{y}{b}=2, ax-by=a^2-b^2$$



**20.** Word Problem of Numbers

A number between 10 and 100 is equal to eight times the sum of its digits. If 45 is substracted from the number then the position of the digits interchange their place. Find the sum of the digits.

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**21.** Word Problem on Numbers

There are two examination halls A and B. If  $10\,$ 

examinees are sent from A to B, the number of examinees in each hall are same. While 20 are sent from B to A, the number in A is double of B. Find the number of examinees in each hall.



### 22. Word Problem on Numbers

The middle digit of a three digit number is 0. The sum of the extreme two digit is 7. The number obtained by interchanging the extreme digit keeping, the middle digit same is less then the original number by 99. Find the

original number.



**23.** Word Problem on Numbers

The middle digit of a three digit number is 3. The digit in the hundredth place is double the digit in the unit place . The number obtained by interchanging the extreme digits keeping middle digit same is less than the original number by 198 .Find the original number.



## 24. Word Problem on Numbers

The ratio of income of two persons is 9:7 and the ratio of their expenditure is 4:3. If each of them save rupees 200 per month, find their monthly income.

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25. Word Problem on Fraction

A fraction will become  $\frac{1}{2}$ , if 2 is added to both

its numerator and denominator, it will become

 $\frac{3}{4}$  if 12 is added to both its numerator and

denominator. Find the fraction.



**26.** Word Problem on Fraction A fraction becomes  $\frac{1}{4}$  when 1 is substracted from its numerator and 1 is added to its denominator. If however 1 is added to the numerator and 1 is substracted from its denominator it becomes  $\frac{1}{3}$ . Find the fraction.



### 27. Word Problem on Fraction

The sum of the numerator and denominator of a fraction is 4more than twice the numerator and if the numerator and denominator are increased by 3 they are in the ratio 2:3. Find the fraction.



28. Word Problem on Fraction

The sum of the numerator and denominator of a fraction is 3 less than twice the denominator. If the numerator and denominator are decreased by 1, the numerator becomes half of the denominator. Determine the fraction.

29. Word Problem on Fraction

A fraction becomes  $\frac{4}{5}$  if 1 is added to both numerator and denominator. If however 5 is substracted from both numerator and denominator , the fraction becomes  $\frac{1}{2}$  . Find the fraction.

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30. Word Problem on Age

8 years ago father's age was thrice that of his

son's age. 2 years hence father's age will be twice that of his son's age. Find the ratio of the ages of father and son after 10 years.

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### 31. Word Problem on Age

A boy is now one third as old as his father.

After 12 he will be half as old as his father. Find

the present ages of both father and son.

#### 32. Word Problem on Age

The sum of the present ages of father and son is 46 years. When the age of the son will be the same as present age of the father, the sum of the ages of the two will be 102 years. Find the present ages of each of them.



#### 33. Word Problem on Age

The sum of the present ages of husband and

wife is 92 years. When the age of the wife will

be the same as present age of the husband,

the sum the ages of the two will be 100 years.

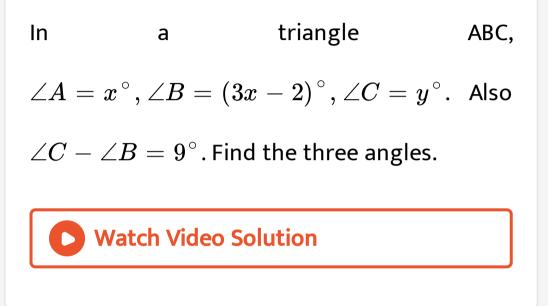
Find the present ages of each of them.

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**34.** 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.



**35.** Work Problem on Geometry



36. Work Problem on Geometry

In a rectangle the length is increased and breadth is reduced by 2m, the area reduced by 28 sq.m. Find the dimension of the rectangle.



#### **37.** Work Problem on Geometry

The side of square exceeds the side of another square by 4cm and the sum of the areas of the two square is 400sq.cm. Find the dimension of the square.



**38.** Work Problem on Geometry

The perimeter of a rectangular field is 80m. If the length of the field id decreased by 2m and breadth is increased by 3m, then the area of the field is increased by 64sq.m. Find the dimension of the field.

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39. Work Problem on Geometry

The area of a rectangle remains the same if

the length is increased by 7m and breadth decreased by 5m. Determine the dimension of the rectangle.