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(Affiliated to CBSE up to +2 Level)

CLASS: X

SUB.: MATHS

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PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

1. For what values of a and b does the following pair of equations have an infinite number of solutions.

$$2x+3y=7,$$

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

2. For what value of k will the following equations have infinitely many solutions?

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

$$x+ (1-2k) y=5k-4$$

3. The sum of denominator and numerator of a fraction is 3 less than twice the denominator. If each of the numerator and denominator is denominator is decreased by 1, the fraction becomes $\frac{1}{2}$. Find the fraction.

4. The sum of the digits of a two-digit number is 12. The number obtained by interchanging the two digits exceeds the given number by 18. Find the number.

5. The sum of the numerator and denominator of a fraction is 12. If 1 is added to both numerator and denominator the fraction becomes $\frac{1}{2}$. Find the fraction.

6. 4 men and 6 boys can finish a piece of work in 5 days while 3 men and 4 boys can finish it in 7 days. Find the time taken by 1 man alone or than by 1 boy alone.

7. A man travels 600km apart by train and partly by car. It takes 8 hours and 40 minutes if he travels 320 km by train and rest by car. It would take 30 minutes more if he travels 200 km by train and the rest by the car/. Find the speed of the train and by car separately.

8. Solve the equations graphically. $2x+y=2$, $2y-x=4$.

Also find the area of a triangle formed by the two lines and the line $y = 0$. .

9. For what value of k will pair of equations have no solution?

$$3x+y=1 ,$$

$$(2k-1)x+(k-1)y=2k+1$$

10. Solve the following pair of equations graphically.

$$x+3y=6,$$

$$2x-3y=12.$$

Also find the area of the triangle formed by the lines representing the given equations with y-axis.