Geetha Aravind's Maths Site

CLASS X

LINEAR EQUATIONS IN TWO VARIABLES.

PRACTICE QUESTIONS:

1) Solve for x and y: $\frac{1}{2x} - \frac{1}{y} = -1$; $\frac{1}{x} + \frac{1}{2y} = 8, x \neq 0, y \neq 0$ (Ans: x = 1/6, y = ¼)

2) Solve by cross multiplication method:
ax + by + a = 0 ; bx + ay + b = 0 (Ans: x = - 1 ; y = 0)

3) Verify that the following system of equations has a unique solution and find that solution:
ax + by + p = 0 ; ax – cy – q = 0 (Ans : $x = \frac{bq - pc}{a(b+c)}, y = -\frac{p+q}{b+c}$)

4) Find k for which the following system of equations has infinitely many solutions:
(k – 3) x + 3y = k ; kx + ky = 12 (Ans : k = 6)

5) Solve for x and y : 148 x + 231y = 527 ; 231x + 148y = 610 . (Ans : x = 2, y = 1)

6) A man has only 20 paisa coins and 25 paisa coins in his purse. If he has 50 coins in all totaling Rs 11.25, how many coins of each does he have? (Ans : 20 paisa = 25, 25 paisa = 25)

7) The sum of the numerator and denominator of a fraction is 8. If 3 is added to both the numerator and denominator the fraction becomes ¾ . Find the fraction. (Ans : 3/5)

8) A man travels 600 km partly by train and partly by car. If he covers 400 km by train and the rest by car, it takes him 6 hours and 30 minutes. But if he travels 200 km by train and the rest by car, he takes half an hour longer. Find the speed of the train and that of the car. (Ans : Train : 100 km / hr ; car : 80 km / hr)

9) Solve the system of equations graphically:
2x + 3y = 12 ; x – y = 1 . Also shade the region between these two lines and the x- axis.
(Ans : x = 3, y = 2)

10) Determine graphically the coordinates of the vertices of the triangle the equations of whose sides are
y = x , y = 2x, x + y = 6. (Ans : (0,0), (2,4), (3,3))

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