

## Maths Work Sheet

Class - X

Chapter:- Linear Equations In Two Variables

**Q01 :** Draw the graphs of  $2x + y = 6$  and  $2x - y + 2 = 0$ . Shade the triangles bounded by these lines and the a)  $x$  - axis, b)  $y$  - axis. Also find the area of these triangles. [Ans.: (a) 8 sq. unit, (b) 2 sq. unit.]

**Q02 :** Solve the following pair of equations:-

a)  $\frac{5}{x+y} + \frac{2}{x-y} = 3$  ,  $\frac{15}{x+y} - \frac{4}{x-y} = -1$  [Ans.:  $x = 3, y = 2$ ]

b)  $99x + 101y = 499$  ,  $101x + 99y = 501$  [Ans.:  $x = 3, y = 2$ ]

c)  $\frac{2}{3x+2y} + \frac{3}{3x-2y} = \frac{17}{5}$  ,  $\frac{5}{3x+2} + \frac{1}{3x-2} = 2$  [Ans.:  $x = 1, y = 1$ ]

d)  $\frac{2}{\sqrt{x}} + \frac{3}{\sqrt{y}} = 2$  ,  $\frac{40}{\sqrt{x}} - \frac{90}{\sqrt{y}} = -10$  [Ans.:  $x = 4, y = 9$ ]

e)  $152x - 378y = -74$  ,  $-378x + 152y = -604$  [Ans.:  $x = 2, y = 1$ ]

**Q03 :** Solve for  $x$  and  $y$ :-

a)  $x + y = a + b$  ,  $ax - by = a^2 - b^2$  [Ans.:  $x = a, y = b$ ]

b)  $\frac{x}{a} + \frac{y}{b} = 2$  ,  $ax - by = a^2 - b^2$  [Ans.:  $x = a, y = b$ ]

**Q04 :** A boat can go 20 km upstream and 30 km downstream in 3 hours. It can go 20 km downstream and 10 km upstream in  $1\frac{2}{3}$  hours. Find the speed of the boat in still water and the speed of the stream. [Ans.: 20 km/h , 10 km/h]

**Q05 :** A man sold a chair and a table together for Rs. 12000 gaining 10% on the chair and 15% on the table. Had he sold them for Rs. 11625, the profit % would have interchanged. Find the C.P. of each of them. [Ans.: Rs. 9000, Rs. 1500]

**Q06 :** In cyclic quadrilateral ABCD,  $\angle A = (2x + 4)^\circ$ ,  $\angle B = (y + 3)^\circ$ ,  $\angle C = (2y + 10)^\circ$  and  $\angle D = (4x - 5)^\circ$ . Find the angles.

**Q07 :** Students of a class are to stand in rows. If one student extra in a row, there would have been two rows less. If one student less in a row, there would have been 3 rows more. Find the number of students in the class. [Ans.: 60] ( $\frac{60}{6} = 10, \frac{60}{5} = 12, \frac{60}{4} = 15$ ).

*Q08 :* A says to B “if you give me 30 of your mangoes, I will have twice as many as left with you.” B replies “if you give me 10, I will have thrice as many as left with you,” How many mangoes does each have? [Ans.: A = 34, B = 62]

*Q09 :* A man when asked how many hens and cows he has, he told that his animals have 120 eyes and 180 legs. How many animals of each kind has he? [Ans.: 30 each]

*Q10 :* 90% and 97% pure acid solution are mixed to obtain 21 liters 95% pure solution. How many liters of each solution are needed? *Ans: 97% = 15 Litres*  
*90% = 6 Litres*

*Prepared By:-*

*Roy Mathew (IISR - Boys Section)*