

ACTIVITY NO - 3

Subject	Mathematics
Class	X
Chapter/Unit	Pair of Linear Equations in two variables
Topic	Graphical solution of Pair of linear equations
Time	35 minutes
Nature of Activity	Individual

What will I learn (Learning Outcome)?

Graphical representation of pair of Consistent linear equations and finding the area of triangle formed by the pair of linear equations with the X-axis.

Skills: Applying, Analyzing and Creating

What I have to do?

To represent the given pair of Consistent linear equations

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

graphically and calculate the area of the triangle formed by these lines and X -axis.

What do I require?

Graph papers, glue stick, geometry box

What do I need to know?

Plotting of points on a Cartesian plane

➤ **Teacher's Activity**

Teacher will revise the concept of graphical solution of pair of linear equations in two variables.

How will I proceed?

➤ **Student's Activity**

The following procedure is followed for each pair of linear equation in two variables:

- 1) Consider the first equation from the given pair of linear equations in two variables.
- 2) Express the variable x in terms of y(or y in terms of x)
- 3) Take at least three values of y and calculate the corresponding values of x.
- 4) Repeat step 2 and 3 for the second equation.
- 5) Record the points in the tabular form.
- 6) Get the point of intersection of the two lines graphically.
- 7) Also, get the points at which the lines intersect the X-axis.
- 8) Calculate the length of the base and height of the triangle so formed.

What have I observed?

$$x - y + 1 = 0$$

x	0		
y	1		

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

x	0		
y	6		

Point of intersection: _____

Length of the base of triangle: _____ units, Height = _____ units.

What have I learnt?

1) _____ is the point of intersection of the lines represented by the given equations.

2) Area of the triangle = _____ sq. units

What am I curious to learn?

Perform the same steps as explained in the activity above to find the area bounded by $x + 3y = 6$, $2x - 3y = 12$ and Y-axis.

Let me evaluate myself

1) Draw the graphs of the following equations: $2x - y = 1$, $x + 2y = 13$ and find the solution graphically. Also find the area of the triangle so formed by the lines and X-axis.

2) Solve graphically the following system of equations:

$$2x + y = 6, -2y + 3x = 2$$

Also find the area of the triangle so formed by these two lines and the y-axis.
