

Pre-Content/content/ Post-Content	Learning outcomes/Objectives	
	General	Specific
Pre-Content Knowledge about linear equations in two variables	recollect and represent a given situation in the form of linear equation in two variables	Students will be able to • frame a linear equation in two variables as per the given the information • rewrite the equation in the standard form • represent the same graphically
Content Pair of linear equations in two variables	represent a given situation in the form of a pair of linear equations in two variables	• frame a pair of linear equation in two variables as per the given the information • rewrite the equations in the standard form
Graphical solution	solve the pair of linear equations in two variables graphically	• create graph and obtain a solution of pair of linear equations in two variables
Algebraic solution of pair of linear equations	solve a pair of linear equations using algebraic methods	• apply the following algebraic methods and obtain the value of the two variables in the linear equation ✓ substitution method ✓ elimination method ✓ cross-multiplication method
Reducing equations to a pair of linear equations	reduce an equation to the standard form and find out the solution	• reorganise and thus reduce the given equation • rewrite it in the standard form and thus find the solution
Post-content • To work out extra practice questions	apply the knowledge learnt related to Pair of linear equations in two variables and solve HOTS questions	• apply the concept learnt to solve various problems • acquire Problem solving skills based on the given equations and conditions.

Home Work /Assignments

NCERT exercise/solved examples given as home task.

Questions from sample papers to solve.

Selected questions from NCERT Exemplar.

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will ask few questions and help students to recall the concept which they have already studied in the class IX give students certain situations and ask them to frame a pair of linear equations in two variables conduct an activity through which they will learn to obtain solution of given pair of linear equations in two variables graphically(Annexure 3) explain all the three algebraic methods and give them practice questions explain the concept and give them questions to solve from the text book give them extra similar questions to solve	Students will answer the questions and create graphs based on their previous knowledge frame equations as per the problems posed in the class perform the activity and write the observation (Annexure 3) solve the problems given in the exercise solve the problems given in the exercise. apply the concept and solve the given practice questions	Teacher will write his/her observations after the completion of the topic.

Teaching Aids: Smart board, Text book, Graph paper, Worksheets, Internet

Methodology/Innovative methods: Digital technology, Interactive, Lecturing, Note giving, Questioning, Discussion

Interdisciplinary Links: Linearity in nature (Science)

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

$$x + 3y = 6, 2x - 3y = 12 \text{ and } Y\text{-axis.}$$

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.
