

National Institute of Open Schooling (NIOS)
Secondary Course : Mathematics
Lesson 5 : Linear Equations
Worksheet - 5

1. Write any five linear equations in two variables of x and y.
2. Form the linear equation using suitable variables for the following situations:
 - i. The length of rectangle is five times its breadth and the perimeter of the rectangle is 44 cm.
 - ii. Twice a number subtracted from square of the number is 15.
3. Solve the following equations:
 - (i) $3(x - 5) = 5(x + 2)$
 - (ii) $\frac{2x}{5} - 4 = 20$
4. The sum of three consecutive odd integers is 45. Find the sum of smallest and greatest integers.
5. Draw a graph of any linear equation in two variables. Represent the values of variables in the tabular form.
6. Draw a Cartesian plane on the graph paper and plot the following points
 - (i) $(-5, 2)$ (ii) $(3, 2)$ (iii) $(4, -5)$ (iv) $(3, 0)$

Write your observations from the graph.
7. For what value of a, the system of equations $ax - y = 2$ and $6x - 2y = 3$ has a unique solution?
8. If $x + \frac{1}{y} = 5$, and $2x + \frac{3}{y} = 13$, then find the value of $2x - 3y$.
9. Solve the system of equations by using substitution method and elimination method

$$x - y = 5$$

$$x - 2y = -5$$

Write your observation on both the substitution method and elimination method.
10. In a rational number, the denominator is greater than its numerator by 5. If the denominator is decreased by 2 and numerator is increased by 6, the obtained number is $\frac{4}{3}$. Find the rational number.