MATHS

BOOKS - NAGEEN MATHS (HINGLISH)

LINEAR EQUATIONS IN TWO VARIABLES

Solved Examples

1. Show that x=2,y=1, satisfy the linear equation

7x+4y=18

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2. Find four different solution of the equation $x+5y=20$.

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3. Draw the graph of $y=2x$.

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4. Draw the graph of the straight line given by equation 5x+6y=30 . Use this graph to find the area of the triangle by this line and the co-ordinate axes.

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5. Draw the graph of the equation x+2y =4, use graph to find :

(a) X_1, the value of x when $y = 4(b)Y_1$ the value of y when x= -2

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6. Draw the graphs of x =0, y =0,x=a,y=b

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7. On a graph paper draw a straight line represented by the equation 2x-3y+132=0. Use the graph drawn to find the values of m and n so that the points (m,-2) and (3,n) lie on the given straight line.

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8. Given the equation of two straight lines passing through $(-5, 13)$. How many such lines are there?

A. Infinite line

B. one line

C. Three lines

D. Four lines

Answer: N/A

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9. Draw the graph of the equation $3x-4y=12$. comment on:

(i)$x=0, y=3$ is a solution of the equation.

(ii) The abscissa i.e. the value of x can never be 100 units.

(iii) Sum of intercept (parts made by straight line on the axes) on the axed is 7 units.

(iv) Length of line segment between the axes is 5 units

(v) Area of triangle formed by the line $3x-4y=12$ and co ordinate axes.

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10. solve the equation $2x-3=5x+6$ and represent the solution (s) on (i) the number line, (ii) the catesian plane.

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11. The equation of a straight line is $\frac{2x}{3} + \frac{y}{6} - 5 = 0$

(i) Express the above equation in the form ax+b +c=0 and hence find the ordinate of a point whose abscissa is $\frac{3}{2}$

(ii) Express y in terms of x given that $\frac{2x}{3} + \frac{y}{6} - 5 = 0$ check whether (7,2) is a solution of given line .

(iii) Find the point where line $\frac{2x}{3} + \frac{y}{6} - 5 = 0$ cuts the y axis.

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12. Draw the straight lines x-y+2=0 and 3x-8y=12 on the same graph pap[er

(i) Find the point where the two lines meet each other.

(ii) Find the area of traingle foprmed by these lines and x-axis.

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Problems From Ncert Exemplar

1. If the point (3,4) lies on the graph of the equation 3y -ax -7 =0 find the value of a

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2. The taxi fare in a city is as follows: For the first kilometre, the fare is Rs 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered as x km and total fare as Rs y, write a linear equation for this information, and draw.

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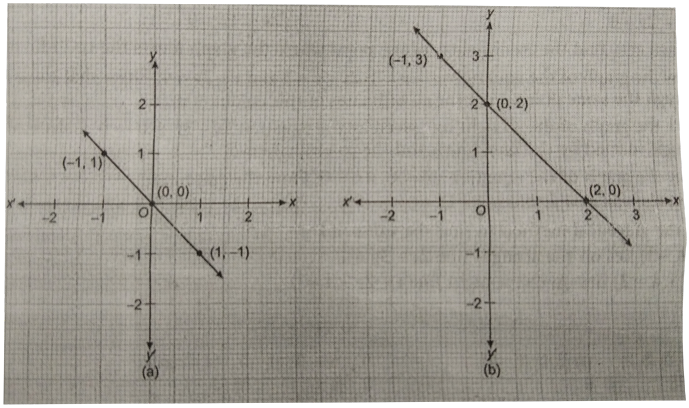
3. From the choices given below choose the equation whose graphs are given in fig (a) and fig(b)



For fig (a)

(i) $y = x$ (ii) $x + y = 0$

(iii) $y = 2x$ (iv) $2 + 3y = 7x$

For fig (b)

(i) $y = x + 2$ (ii) $y = x - 2$

(iii) $y = -x + 2$ (iv) `x+2

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4. If the work done by a body on application of a constant force is directly proportional to the distance travelled by the body, express this in the form of an equation in two variables and draw the graph of the same by taking the constant force as

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5. Yamini and Fatima, two students of Class IX of a school, together contributed Rs 100 towards the Prime Minister's Relief Fund to help the earthquake victims. Write a linear equation which satisfies this data. (You may take their contributions as

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6. In countries like USA and Canada, temperature is measured in Fahrenheit, whereas incountries like India, it is measured in Celsius. Here is a linear equation that convertsFahrenheit to Celsius: $F = \left(\frac{9}{5}\right)C + 32$(i) Draw the graph of the linear eq

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7. Draw the graphs of linear equations y=x and y=-x on the same cartesian plane. What do you observe ?

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Exercise

1. Draw the graph of :

(i) x+2y=4 , (ii) 2x+4y=6

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2. Draw the graph of the straight line given by the equation 4x-3y+36=0. Calculate the area of the triangle formed by the line drawn and the co-ordinate axes.

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3. Draw the graph of the equation 4x+3y+6=0. From the graph find.

(i) y_1, the value opf y, when x=12

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Revision Exercise

1. Write the equation of x axis.

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2. Write the equation of y axis.

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3. Where will the point (a,0) lie?

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4. Where will the point (0,a) lie?

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5. On what point the graph of linear equation $3x+2y=9$ will intersect x-axis?

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6. The cost of a book is three times the cost of a note book , write it in equation form using two variables.

A. $x + 3y$

B. $x - 3y$

C. $x + 3y = 0$

D. $x = 3y$

Answer: D

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7. Show that (3,4) and (0,6) are the solutions of the equation $2x+3y=18$

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8. If the point (2,3) lies on the graph of the equation $ax+2y=10$, find the value of a

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9. Find two solution sof each of the following:

(i)$x+y=6$, (ii) $2x+3y=12$

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10. The graph of the linear equation $2x+3y=6$ is

a line which meets the X-axis at the point.

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11. Draw the graph of x+2y =5 .From the graph , find (i) x_1 the value of x when y =-1 (ii) y_1 the value of y when x=-3

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12. A straight line passes through the points (2,4) and (5,-2) Mark these points on a graph paper and draw the straight line through these points. If points (m,-4) and (3,n) lie on the line drawn, find the values of m and n.

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