

01 The force (in newtons) required to produce acceleration (in metres/sec²) in a body of constant mass (in kg) is directly proportional to the acceleration. Express the above statement as a linear equation in two variables and draw its graph by taking the constant mass equal to 2 kg. Read from the graph the force required when acceleration is 2 m/sec².

Your solution here:

02 The work done by a body on application of a constant force is directly proportional to the distance travelled by the body in a straight line. Express this in the form of a linear equation in two variables and draw its graph by taking the constant force as 3 units. Read from the graph, the work done when the distance travelled is 2 units.

Your solution here:

03

The taxi fare in a city is charged as per the rates stated below.

Rate for the first kilometer of journey is Rs. 5 and the rate for the subsequent distance covered is Rs. 4 per km. Taking distance covered as x km and total fare as Rs. y . Write the linear equation in variables x and y to express the above statement. Draw the graph for the linear equation.

Your solution here:

04

A straight line passes through the points $(2, 4)$ and $(5, -2)$. Taking $1 \text{ cm} = 1 \text{ unit}$; 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 .

Your solution here:

05 Draw the graph (straight line) given by equation $x - 3y = 18$. If the straight line drawn passes through the points $(m, -5)$ and $(6, n)$; find the values of m and n .

Your solution here:

06 Use the table given below to draw the graph.

x	-5	-1	3	b	13
y	-2	a	2	5	7

From your graph, find the values of ' a ' and ' b '.

Your solution here:

07

In a factory, the cost of manufacturing x -articles is Rs. $(20 + 2x)$ and the selling price of x articles is Rs. $(2.5x)$. On the same graph paper, with the same axis, draw two graphs, first for the cost of manufacturing against no. of articles and the second for the selling price against no. of articles.

Take 2 cm = 10 articles on one axis and 2 cm = Rs 20 on the other axis. Provide for x upto 80. Use your graph to determine.

- (i) No. of articles to be manufactured and sold to reach breakeven point (no profit and no loss situation).
- (ii) The profit made when 60 articles are manufactured and sold.

Your solution here: