

#463606

Topic: Linear Equations in One Variable

The taxi fare in a city is as follows: For the first kilometre, the fare is 8 and for the subsequent distance it is 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 its graph.

**Solution**

$x$	0	1	2
$y$	3	8	13

Taxi fare for first kilometer = Rs. 8

Taxi fare for subsequent distance = Rs. 5

Total distance covered =  $x$ Total fare =  $y$ 

Since the fare for first kilometer = Rs.8

According to problem,

Fare for  $(x-1)$  kilometer =  $5(x-1)$ So, the total fare  $y = 5(x-1) + 8$ 

$$\Rightarrow y = 5(x-1) + 8$$

$$\Rightarrow y = 5x - 5 + 8$$

$$\Rightarrow y = 5x + 3$$

Hence,  $y = 5x + 3$  is the required linear equation.

Now the equation is

$$y = 5x + 3 \quad \dots(1)$$

Now, putting the value  $x = 0$  in (1)

$$y = 5 \times 0 + 3$$

$$y = 0 + 3 = 3 \text{ So the solution is } (0, 3)$$

Putting the value  $x = 1$  in (1)

$$y = 5 \times 1 + 3$$

$$y = 5 + 3 = 8 \text{ So the solution is } (1, 8)$$

Putting the value  $x = 2$  in (1)

$$y = 5 \times 2 + 3$$

$$y = 10 + 3 = 13 \text{ So the solution is } (2, 13)$$

