

ਸਾਧਿਕਾਇ - 4 Chapter - 4

ਦੋ ਚਰਾਂ ਵਾਲੀ ਰੇਖੀ ਸਮੀਕਰਣ

Linear Equation in two variables

$$ax + by + c = 0$$

ਸਾਧਿਕਾਇ - 4.1 Exercise - 4.1

- ① ਇੱਕ ਕਾਪੀ ਦਾ ਮੁੱਲ ਇੱਕ ਪੈਨ ਦੇ ਮੁੱਲ ਤੋਂ ਦਗਣਾ ਹੈ। ਇਸ ਕਥਨ ਨੂੰ ਦਰਸਾਉਣ ਲਈ ਦੋ ਚਰਾਂ ਵਾਲੀ ਰੇਖੀ ਸਮੀਕਰਣ ਲਿਖੋ।

The cost of a notebook is twice the cost of a pen. write a linear equation² in two variable to represent this statement.

Ans

ਮੰਨ ਲਵੋ ਪੈਨ ਦਾ ਮੁੱਲ = $2x$

ਮੰਨ ਲਵੋ ਕਾਪੀ ਦਾ ਮੁੱਲ = $2y$

A.T.Q

ਕਾਪੀ ਦਾ ਮੁੱਲ = $2 \times$ ਪੈਨ ਦਾ ਮੁੱਲ

$$y = 2x$$

$$y - 2x = 0 \text{ Ans}$$

Let cost of a pen = $2x$

Let cost of a Notebook = $2y$

A.T.Q

Cost of Notebook = 2 (Cost of pen)

$$y = 2x$$

$$y - 2x = 0 \text{ Ans}$$

② ਜੇਹੀ ਲਿੰਨੀਅਰ ਫੀਲਡੀ ਸਮੀਕਰਣਾਂ ਨੂੰ $ax + by + c = 0$ ਦੇ ਰੂਪ ਵਿੱਚ ਲਿਖ ਸਕਦੇ ਹਾਂ ਅਤੇ ਜੇਕਰ ਸਾਡੀ ਲਿਖ a, b ਅਤੇ c ਦੇ ਮੁੱਲ ਦਿਓ:

Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a, b, c in each case.

(i) $2x + 3y = 9.35$

$$2x + 3y - 9.35 = 0$$

$ax + by + c = 0$ ਨਾਲ ਮਿਲਾਏ ਅਤੇ (Compare with $ax + by + c = 0$)

$$a = 2, b = 3, c = -9.35 \text{ Ans}$$

(ii) $x - \frac{y}{5} - 10 = 0$

$$1x - \frac{1y}{5} - 10 = 0$$

$ax + by + c = 0$ ਨਾਲ ਮਿਲਾਏ ਅਤੇ (Compare with $ax + by + c = 0$)

$$a = 1, b = -\frac{1}{5}, c = -10 \text{ Ans}$$

(iii) $-2x + 3y = 6$

$$-2x + 3y - 6 = 0$$

$ax + by + c = 0$ ਨਾਲ ਮਿਲਾਏ ਅਤੇ (Compare with $ax + by + c = 0$)

$$a = -2, b = 3, c = -6 \text{ Ans}$$

(iv) $x = 3y$

$ax + by + c = 0$

$1x - 3y + 0 = 0$

$ax + by + c = 0$ નાં પ્રમાણ રૂઠું છે (compare with $ax + by + c = 0$)

$a = 1, b = -3, c = 0$ Ans

(v) $2x = -5y$

$2x + 5y + 0 = 0$

$ax + by + c = 0$ નાં પ્રમાણ રૂઠું છે (compare with $ax + by + c = 0$)

$a = 2, b = 5, c = 0$ Ans

(vi) $y - 2 = 0$

$ax + by + c = 0$

$0x + 1y - 2 = 0$

$ax + by + c = 0$ નાં પ્રમાણ રૂઠું છે (compare with $ax + by + c = 0$)

$a = 0, b = 1, c = -2$ Ans

(vii) $5 = 2x$

$2x - 5 = 0$

$2x + 0y - 5 = 0$

$ax + by + c = 0$ નાં પ્રમાણ રૂઠું છે (compare with $ax + by + c = 0$)

$a = 2, b = 0, c = -5$ Ans

ਅਭਿਆਸ - 4.2

Exercise - 4.2

① ਜੋਠਾਂ ਦਿੱਤੇ ਵਿਕਲਪਾਂ ਵਿੱਚੋਂ, ਕਿਹੜਾ ਵਿਕਲਪ ਸੱਚ ਹੈ ਤੇ ਕਿਉਂ?
which one of the following options is true & why $y = 3x + 5$ has 1 soln)

i) ਇੱਕ ਵਿਸ਼ੇਸ਼ ਔਕ ਹੈ (a unique solution)

ii) ਸਿਰਫ਼ ਦੋ ਔਕ ਹਨ (only two solutions)

iii) ਅਨੰਤ ਰੂਪ ਵਾਲੀ ਔਕ ਹਨ (infinitely many solutions)

ਜਵਾਬ; ਕਿਉਂ y , x ਦੇ ਮੁੱਲ ਤੇ ਨਿਰਭਰ ਹੈ
(because, y depends upon x)

$$\begin{aligned} y &= 3x + 5 \\ x=0, y &= 3(0) + 5 = 5 \\ x=1, y &= 3(1) + 5 = 8 \\ x=2, y &= 3(2) + 5 = 11 \end{aligned}$$

② ਜੋਠਾਂ ਦਿੱਤੀਆਂ ਸਮੀਕਰਣਾਂ ਵਿੱਚੋਂ ਹਰੇਕ ਸਮੀਕਰਣ ਲਈ ਚਾਰ ਔਕ ਲਿਖੋ:
write four solutions for each of following eq^s.

i) $2x + y = 7$

$$y = 7 - 2x$$

$x=0$, $y = 7 - 2(0)$
 $= 7 - 0$

$y = 7$

$x=1$, $y = 7 - 2(1)$
 $= 7 - 2$

$y = 5$

$x=2$, $y = 7 - 2(2)$
 $= 7 - 4$

$y = 3$

$x=3$, $y = 7 - 2(3)$
 $= 7 - 6$

$y = 1$

x	0	1	2	3
y	7	5	3	1

Ans

$$(ii) \quad 11x + y = 9$$

$$11x + 1y = 9$$

$$y = 9 - 11x$$

$$x=1, \quad y = 9 - 11(1)$$

$$y = 9 - 11$$

$$x=2, \quad y = 9 - 11(2)$$

$$y = 9 - 22$$

$$x=3, \quad y = 9 - 11(3)$$

$$y = 9 - 33$$

$$x=4, \quad y = 9 - 11(4)$$

$$y = 9 - 44$$

x	1	2	3	4
y	9-11	9-22	9-33	9-44

Ans

$$(iii) \quad x = 4y$$

$$x = 4y$$

$$y=0, \quad x = 4(0)$$

$$x = 0$$

$$y=1, \quad x = 4(1)$$

$$x = 4$$

$$y=2, \quad x = 4(2)$$

$$x = 8$$

$$y=3, \quad x = 4(3)$$

$$x = 12$$

x	0	4	8	12
y	0	1	2	3

Ans

③ જેમ રિ તેમ દિંતે ઉંકાં દિલેં લિડ્ઝા મમીવરદ
 $x - 2y = 4$ હે ઉંકાં ડે મડે લિડ્ઝા નગીં ડે,

Check which of the following are solutions of the equation $x - 2y = 4$ and which are not:

i) (0, 2)

Sol:-

$$x - 2y = 4$$

$x = 0, y = 2$ મમીવરદ દિલેં ડગડે (put $x = 0, y = 2$ in given equation)

$$0 - 2(2) = 4$$

$$-4 = 4 \text{ ગાપડે ડે (false)}$$

લિડે (0, 2), લિંડે મમીવરદ હા ડગડે નગીં ડે

[(0, 2) is not a solution of given equation]

ii) (2, 0)

Sol:-

$$x - 2y = 4$$

$x = 2, y = 0$ મમીવરદ દિલેં ડગડે (put $x = 2, y = 0$ in given equation)

$$2 - 2(0) = 4$$

$$2 = 4 \text{ ગાપડે ડે (false)}$$

લિડે (2, 0), લિંડે મમીવરદ હા ડગડે નગીં ડે

[(2, 0) is not a solution of given equation]

iii) (4, 0)

Sol:-

$$x - 2y = 4$$

$x = 4, y = 0$ મમીવરદ દિલેં ડગડે (put $x = 4, y = 0$ in given equation)

$$4 - 2(0) = 4$$

$$4 = 4 \text{ મગી (True)}$$

લિડે (4, 0), લિંડે મમીવરદ હા ડગડે ડે

[(4, 0) is a solution of given equation]

(iv) $(\sqrt{2}, 4\sqrt{2})$

$$x - 2y = 4$$

$x = \sqrt{2}$, $y = 4\sqrt{2}$ સમીકરણ દિલે કહો કે (Put $x = \sqrt{2}$, $y = 4\sqrt{2}$ in given equation)

$$\sqrt{2} - 2(4\sqrt{2}) = 4$$

$$\sqrt{2} - 8\sqrt{2} = 4 \quad \text{ગણતરી (false)}$$

$(\sqrt{2}, 4\sqrt{2})$ સિદ્ધી સમીકરણ ના ઉદ્ધર નથી છે.

$(\sqrt{2}, 4\sqrt{2})$ is not a solution of given equation

(v) $(1, 1)$

$$x - 2y = 4$$

$x = 1$, $y = 1$ સમીકરણ દિલે કહો કે (Put $x = 1$, $y = 1$ in given equation)

$$1 - 2(1) = 4$$

$$1 - 2 = 4$$

$$-1 = 4 \quad \text{ગણતરી (false)}$$

$(1, 1)$ સિદ્ધી સમીકરણ ના ઉદ્ધર નથી છે.

$(1, 1)$ is not a solution of given equation

(d) k ના મૂલ્ય શોધો કે જેથી $x = 2$, $y = 1$ સમીકરણ $2x + 3y = k$ ના ઉદ્ધર હોય.

Find the value of k , if $x = 2$, $y = 1$ is a solution of the equation $2x + 3y = k$.

સોલ્યુશન:-

$$2x + 3y = k$$

$x = 2$, $y = 1$ સમીકરણ દિલે કહો કે (Put $x = 2$, $y = 1$ in given equation)

$$2(2) + 3(1) = k$$

$$4 + 3 = k$$

$$7 = k$$

$$\boxed{k = 7}$$

ਅਭਿਆਸ - 4.3

Exercise - 4.3

① ਦੋ ਚਲਾਂ ਵਾਲੀਆਂ ਤੇਰਾਂ ਫਿੱਟੀਆਂ ਤੇਰੀ ਸਮੀਕਰਨ ਦਿੱਤੇ ਹੋਏ ਹਨ।
ਦਾ ਗ੍ਰਾਫ਼ ਖਿੱਚੋ:

Draw the graph of each of following linear equations in two variables.

i) $x + y = 4$

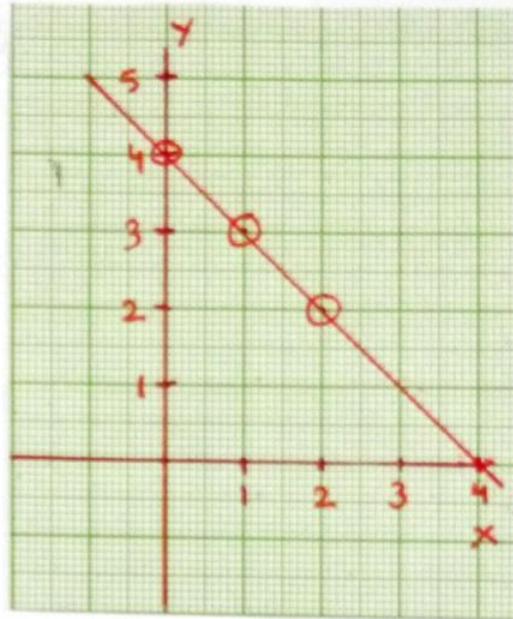
$$y = 4 - x$$

$$x=0, y=4-0$$
$$y=4$$

$$x=1, y=4-1$$
$$y=3$$

$$x=2, y=4-2$$
$$y=2$$

x	0	1	2
y	4	3	2



ii) $x - y = 2$

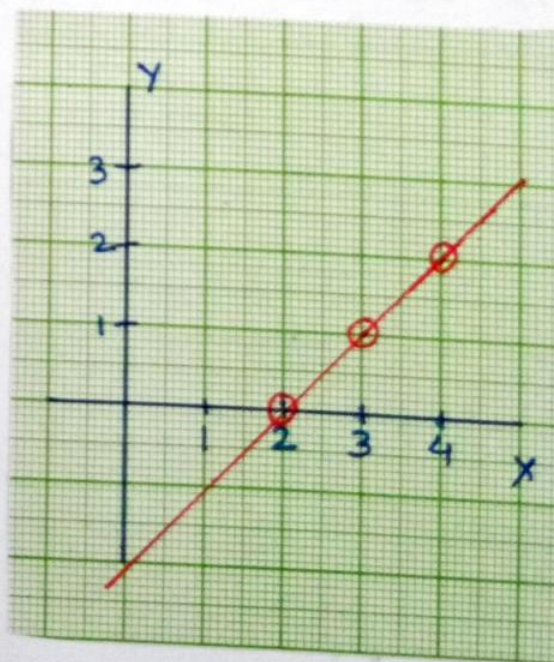
$$x = 2 + y$$

$$y=0, x=2+0$$
$$x=2$$

$$y=1, x=2+1$$
$$x=3$$

$$y=2, x=2+2$$
$$x=4$$

x	2	3	4
y	0	1	2



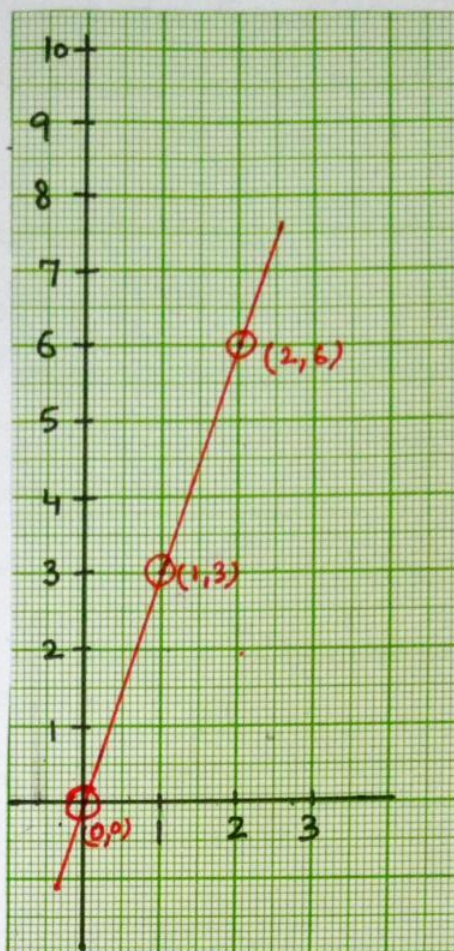
iii) $y = 3x$

$x=0$, $y=3(0)$
 $y=0$

$x=1$, $y=3(1)$
 $y=3$

$x=2$, $y=3(2)$
 $y=6$

x	0	1	2
y	0	3	6



iv) $3 = 2x + y$

$3 - 2x = y$

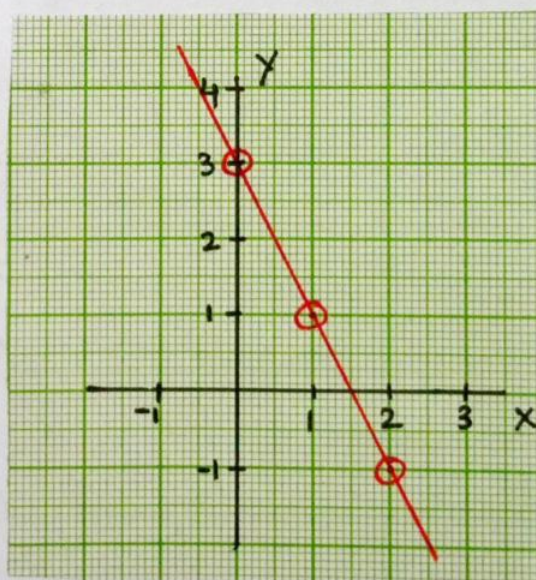
$y = 3 - 2x$

$x=0$, $y=3-2(0)$
 $y=3$

$x=1$, $y=3-2(1)$
 $= 3-2$
 $y=1$

$x=2$, $y=3-2(2)$
 $= 3-4$
 $y=-1$

x	0	1	2
y	3	1	-1



② ਬਿੰਦੂ $(2, 14)$ ਵਿੱਚੋਂ ਤੇ ਕੋਈ ਜਾਣ ਵਾਲੀਆਂ ਦੋ ਰੇਖਾਵਾਂ ਦੇ
ਸਮੀਕਰਣ ਲਿਖੋ। ਇਸ ਤਰ੍ਹਾਂ ਦੀਆਂ ਹੋਰ ਕਿੰਨੀਆਂ ਰੇਖਾਵਾਂ
ਤੇ ਸਮਝਦੀਆਂ ਹਨ ਤੇ ਕਿਉਂ?

Give the equations of two lines passing through
 $(2, 14)$. How many more such lines are there &
why?

Sol:- $x + y = 16$
 $x - y = -12$

ਇਸ ਤਰ੍ਹਾਂ ਦੀਆਂ ਅਨੰਤ ਰੇਖਾਵਾਂ ਤੇ ਸਮਝਦੀਆਂ ਹਨ।
(There are infinite no. of lines)

③ ਜੇ ਬਿੰਦੂ $(3, 4)$ ਸਮੀਕਰਣ $3y = ax + 7$ ਦੇ ਗ੍ਰਾਫ 'ਤੇ ਸਥਿਤ ਹੈ,
ਤਾਂ a ਦਾ ਮੁੱਲ ਪਤਾ ਕਰੋ।

If the point $(3, 4)$ lies on the graph of the equation
 $3y = ax + 7$, find the value of 'a'?

Sol $3y = ax + 7$

$(3, 4)$ ਸਮੀਕਰਣ ਦੇ ਗ੍ਰਾਫ 'ਤੇ ਸਥਿਤ ਹੈ। $((3, 4) \text{ lies on the graph of given equation})$

$$3(4) = a(3) + 7$$

$$12 = 3a + 7$$

$$12 - 7 = 3a$$

$$5 = 3a$$

$$\boxed{\frac{5}{3} = a}$$

4) ਇੱਕ ਨਗਰ ਵਿੱਚ ਟੈਕਸੀ ਦਾ ਕਿਰਾਇਆ ਜੇਠ ਲਿਖਿਆ ਹੈ; ਪਹਿਲੇ ਕਿਲੋਮੀਟਰ ਦਾ ਕਿਰਾਇਆ ਰੁ 8 ਹੈ ਤੇ ਉਸਦੇ ਬਾਅਦ ਹੀ ਹਰੇ ਕਈ ਪ੍ਰਤੀ ਕਿਲੋਮੀਟਰ ਦਾ ਕਿਰਾਇਆ 5 ਰੁ ਹੈ। ਜੇ ਤੈਸਾ ਕੀਤੀ ਗਈ ਹੋਵੇ, ਕਿਲੋਮੀਟਰ ਉੱਤੇ ਤੇ ਕੁੱਲ ਕਿਰਾਇਆ y ਰੁ ਉੱਤੇ ਤਾਂ ਇਸਦਾ ਰੈਖੀ ਸਮੀਕਰਨ ਲਿਖੋ ਤੇ ਗਾਫ਼ ਦਾ ਖਿੱਚੋ।

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

$$\text{ਦੂਰੀ} = x$$

$$\text{ਕੁੱਲ ਕਿਰਾਇਆ} = y$$

A.T.Q

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

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

$$y = 3 + 5x$$

x	0	1	2
y	3	8	13

$$y = 3 + 5x$$

$$x=0, \quad y = 3 + 5(0)$$

$$y = 3$$

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

$$y = 3 + 5$$

$$y = 8$$

$$x=2, \quad y = 3 + 5(2)$$

$$y = 3 + 10$$

$$y = 13$$

$$\text{Distance} = x \text{ km}$$

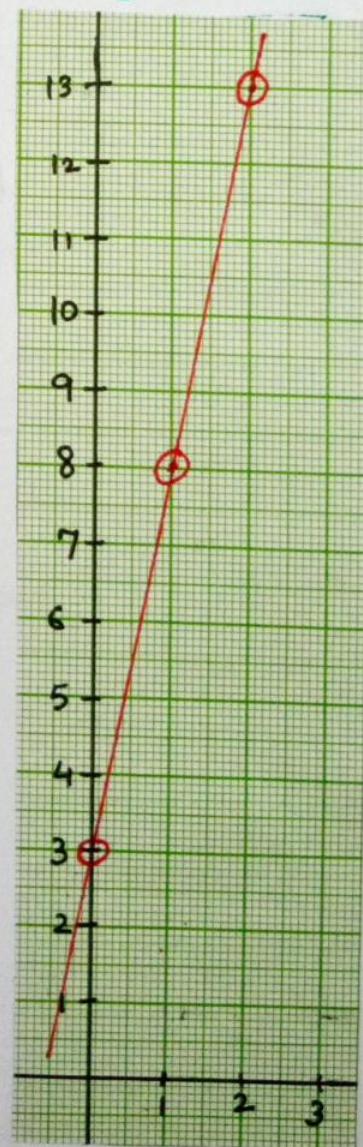
$$\text{Total fare} = ₹ y$$

A.T.Q

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

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

$$y = 3 + 5x$$



⑥ દિંદ્ર અમલ દાલ જગાડિય ' કે દિંદ્ર પિંડ દુભાગ વીડા ગિભાગ વાગમ પિંડ દુભાગ કેમ વીડી ગણી દુગી દે મમલ અનુપાતી ઉપા છે. દિંદ્ર રમલ ને દે ચલાં દાલે મમલિય દે રૂપ દિંદ્ર દુભાગી અડે અમલ દાલ 5 અમલ દિવાણીમાં ને વે દિંદ્રા માલેસ પિંડે. ને પિંડ દુભાગ કેમ વીડી ગણી દુગી ...

Ans (Let work done) મરે રૂડી રાગમ = y
રૂડી = x

Ans (Let distance)

રાગમ = દાલ $\times$ રૂડી

(Work done = force $\times$ distance)

$$y = 5x$$

$$x = 0, y = 5(0) = 0$$

$$x = 1, y = 5(1) = 5$$

$$x = 2, y = 5(2) = 10$$

x	0	1	2
y	0	5	10

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 constant force as 5 units. Also read from graph the work done when distance travelled by the body is :

a) 2 units (2 દિવાણી)

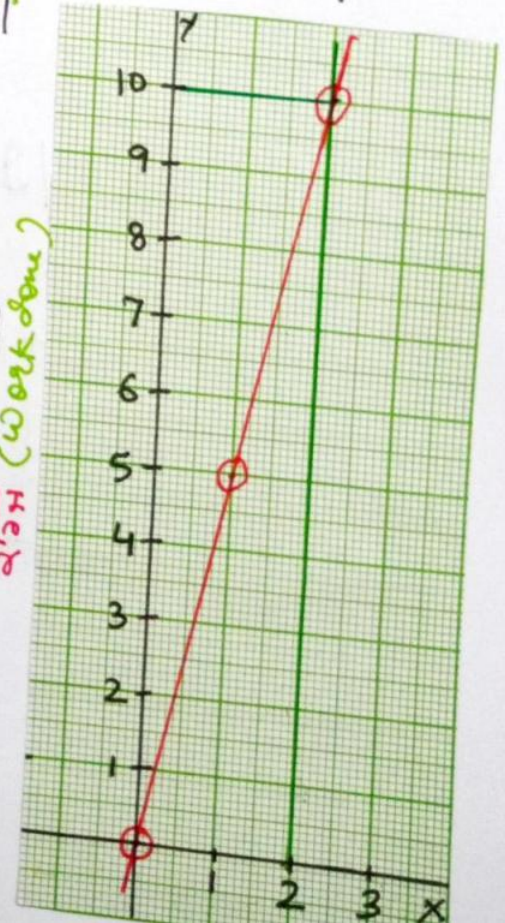
Ans મેં રૂડી 2 દિવાણી કે કાં ગાલ કે રાગમ 10 દિવાણી કે
(if distance is 2 unit the work done is 10 unit)

(b) 0 unit (0 દિવાણી)

Ans મેં રૂડી 0 દિવાણી કે કાં ગાલ કે રાગમ 0 દિવાણી કે

(if distance is 0 unit then the work done is also 0 unit)

રાગમ (work done)



⑦ Yamini and Fatima, two students of class IX of a school, together contributed ₹ 100 towards the Prime Minister's Relief fund to help the earthquake victims. Write a linear equation which satisfies this data.

~~Very~~ Draw the graph of the same.

ਇੱਕ ਸਕੂਲ ਦੀ ਨੌਵੀਂ ਜਮਾਤ ਦੀਆਂ ਦੋ ਵਿਦਿਆਰਥੀਆਂ ਯਮਿਨੀ ਤੇ ਫਾਤਿਮਾ ਨੇ ਮਿਲਕੇ ਕੁਲ ਪੀੜ੍ਹਤ ਵਿਅਕਤੀਆਂ ਦੀ ਸਹਾਇਤਾ ਲਈ ਯੋਗਦਾਨ ਅੰਤਰੋਂ ਕਰ ਦਿੱਤਾ 100 ਰੁ: ਦਾ ਯੋਗਦਾਨ ਕੀਤਾ। ਇਹ ਰਕਮ ਸਮੀਕਰਣ ਨਿੱਚੇ ਦੇ ਦਿੱਤਾ ਸਮੀਕਰਣ ਨੂੰ ਸੰਤੁਸ਼ਟ ਕਰਦੀ ਹੋਵੇ। ਇਸ ਸਮੀਕਰਣ ਦਾ ਗਾਫ਼ ਬਿੰਦੋਂ।

Ans ਮਨ ਪੜ੍ਹੇ ਯਮਿਨੀ ਨੇ ਯੋਗਦਾਨ ਕੀਤਾ = ₹ x (Let Contribution of Yamini = ₹ x)
ਮਨ ਪੜ੍ਹੇ ਫਾਤਿਮਾ ਨੇ ਯੋਗਦਾਨ ਕੀਤਾ = ₹ y (Let Contribution of Fatima = ₹ y)

A.T.Q. $x + y = 100$

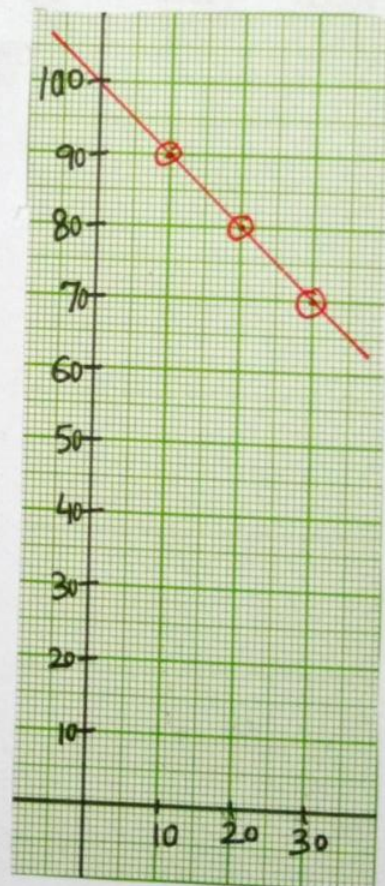
$y = 100 - x$

$x = 10, y = 100 - 10$
 $y = 90$

$x = 20, y = 100 - 20$
 $y = 80$

$x = 30, y = 100 - 30$
 $y = 70$

x	10	20	30
y	90	80	70



⑧ In countries like USA and Canada, temperature is measured in Fahrenheit, whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius.

$$F = \left(\frac{9}{5}\right)C + 32$$

ਅਮਰੀਕਾ ਤੇ ਕੈਨੇਡਾ ਵਰਗੇ ਦੇਸ਼ਾਂ ਵਿੱਚ ਤਾਪਮਾਨ ਫਾਰਨਹੀਟ ਵਿੱਚ ਮਾਪਿਆ ਜਾਂਦਾ ਹੈ, ਜਦੋਂ ਕਿ ਭਾਰਤ ਵਰਗੇ ਦੇਸ਼ਾਂ ਵਿੱਚ ਤਾਪਮਾਨ ਸੈਲਸੀਅਸ ਵਿੱਚ ਮਾਪਿਆ ਜਾਂਦਾ ਹੈ। ਇੱਥੇ ਫਾਰਨਹੀਟ ਨੂੰ ਸੈਲਸੀਅਸ ਵਿੱਚ ਬਦਲਣ ਲਈ ਇਹ ਥੋੜੀ ਸਮੀਕਰਣ ਦਿੱਤੀ ਗਈ ਹੈ

$$F = \left(\frac{9}{5}\right)C + 32$$

- ਸੈਲਸੀਅਸ ਨੂੰ x-ਧਰਾ ਅਤੇ ਫਾਰਨਹੀਟ ਨੂੰ y-ਧਰਾ ਮੰਨ ਕੇ ਉੱਪਰ ਦਿੱਤੇ ਗਏ ਥੋੜੀ ਸਮੀਕਰਣ ਦਾ ਗ੍ਰਾਫ਼ ਖਿੱਚੋ।
- Draw the graph of the linear equation above using Celsius for x-axis and Fahrenheit for y-axis.

Ans

$$F = \frac{9}{5}(C) + 32$$

$$C = 5, \quad F = \frac{9}{5}(5) + 32$$

$$F = 9 + 32 = 41$$

$$F = 41$$

$$C = 10, \quad F = \frac{9}{5}(10) + 32$$

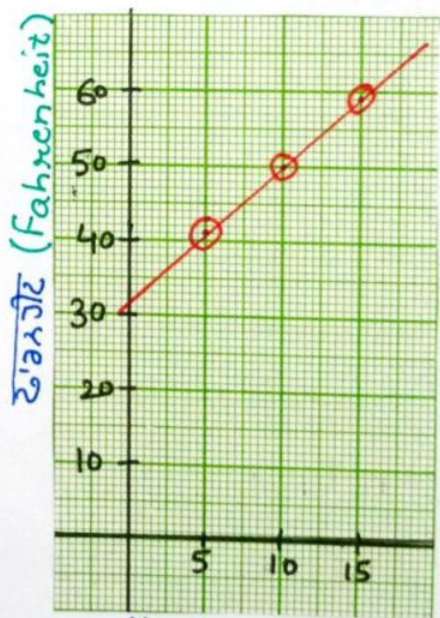
$$F = 18 + 32 = 50$$

$$F = 50$$

$$C = 15, \quad F = \frac{9}{5}(15) + 32$$

$$F = 27 + 32 = 59$$

$$F = 59$$



ਸੈਲਸੀਅਸ (Celsius)

C	5	10	15
F	41	50	59

(ii) If the temperature is 30°C , what is temperature in Fahrenheit?

ਜੇਕਰ ਤਾਪਮਾਨ 30°C , ਤਾਂ ਤਾਪਮਾਨ ਫ਼ਾਰਨਹੀਟ ਵਿੱਚ ਕੌਣਾ ਹੈ?

Sol:-

$$F = \frac{9}{5}C + 32$$

$$C = 30^{\circ}$$

$$F = \frac{9}{5}(30)^{\circ} + 32$$

$$F = 54 + 32$$

$$\boxed{F = 86^{\circ}}$$

(iii) If the temperature is 95°F , what is temperature in Celsius?

ਜੇਕਰ ਤਾਪਮਾਨ 95°F , ਤਾਂ ਤਾਪਮਾਨ ਸੈਲਸੀਅਸ ਵਿੱਚ ਕੌਣਾ ਹੈ?

Sol:-

$$F = \frac{9}{5}C + 32$$

$$F = 95^{\circ}$$

$$95 = \frac{9}{5}C + 32$$

$$95 - 32 = \frac{9}{5}C$$

$$63 = \frac{9}{5}C$$

$$63 \times \frac{5}{9} = C$$

$$\boxed{C = 35^{\circ}}$$

Ans

in Fahrenheit and if the temperature is 0°F , what is temperature in Celsius?

ਜੇਕਰ ਤਾਪਮਾਨ 0°C , ਤਾਂ ਤਾਪਮਾਨ ਫਾਰਨਹੀਟ ਵਿੱਚ ਕਿੰਨਾ ਹੋਵੇਗਾ? ਅਤੇ ਜੇਕਰ ਤਾਪਮਾਨ 0°F ਤਾਂ ਤਾਪਮਾਨ ਸੈਂਟੀਗਰੇਡ ਵਿੱਚ ਕਿੰਨਾ ਹੋਵੇਗਾ?

Sol:-

$$F = \frac{9}{5}C + 32$$

$$C = 0^{\circ}$$

$$F = \frac{9}{5}C + 32$$

$$F = \frac{9}{5}(0) + 32$$

$$F = 32^{\circ}$$

$$F = 0^{\circ}$$

$$F = \frac{9}{5}C + 32$$

$$0 = \frac{9}{5}C + 32$$

$$-32 = \frac{9}{5}C$$

$$-32 \times \frac{5}{9} = C$$

$$C = -\frac{160}{9}$$

(V) Is there a temperature which is numerically the same in both Fahrenheit and Celsius. If yes, find it?

ਕੀ ਅਜਿਹਾ ਕੋਈ ਤਾਪਮਾਨ ਹੈ, ਜੋ ਫਾਰਨਹੀਟ ਅਤੇ ਸੈਂਟੀਗਰੇਡ ਦੋਨਾਂ ਦੇ ਲਈ ਸੰਖਿਆਤਮਕ ਰਾਸ਼ੀ ਹੈ? ਜੇ ਹਾਂ, ਉਸਨੂੰ ਪਤਾ ਕਰੋ।

Sol

$$F = \frac{9}{5}C + 32$$

$$F = C$$

$$C = \frac{9}{5}C + 32$$

$$\frac{C}{5} - \frac{9C}{5} = 32$$

$$\frac{5C - 9C}{5} = 32$$

$$-4C = 32 \times 5$$

$$C = \frac{32 \times 5}{-4}$$

$$C = -40^{\circ}\text{C Ans.}$$

$$C = F = -40^{\circ}$$

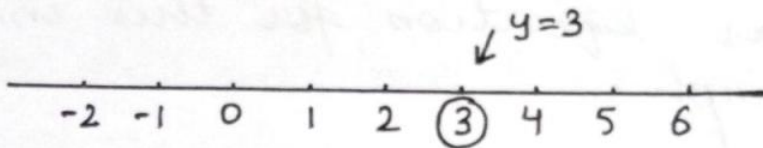
① (i) ਇੱਕ ਚੱਲ ਟਾਫ਼ੀ (In one variable)

ਸਮੀਕਰਣ ਦੇ ਰੂਪ ਵਿੱਚ $y = 3$ ਦਾ ਕੁਆਇਡੀ ਨਿਰੂਪਣ ਕਰੋ

Give the geometric representation of $y = 3$ as an equation

Sol:

$$y = 3$$

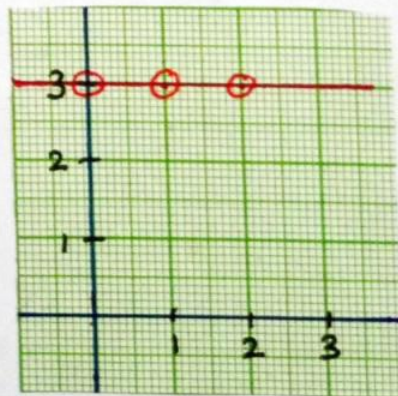


(ii) In two variable (ਦੋ ਚੱਲ ਟਾਫ਼ੀ)

Sol: $y = 3$

$$y = 3 + 0x$$

x	0	1	2
y	3	3	3



② समीकरण $2x + 9 = 0$ का भ्रगण्टी नरुपण
करे।

Give the geometric representation of $2x + 9 = 0$
as an equation,

(i) एक चर वाले (In one variable)

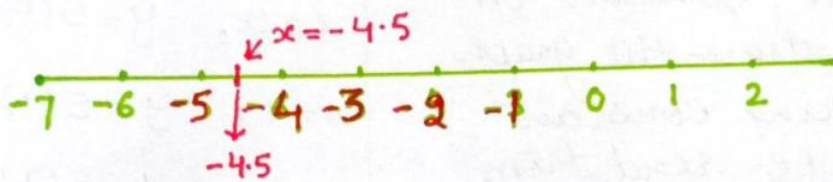
Sol:-

$$2x + 9 = 0$$

$$2x = -9$$

$$x = -\frac{9}{2}$$

$$x = -4.5$$



(ii) दो चर वाले (In two variable)

$$x = -4.5$$

$$x = -4.5 + 0y$$

x	-4.5	-4.5	-4.5
y	0	1	2

