Q 1 : Write two solutions for each of the following equations:

(i)5x − 2y = 7

(ii) x = 6y

(iii) x +πy = 4

(iv) 2/3x − y = 4.

A 1 :

(i) We are given,

3x + 4y =7

Substituting x = 1

In the given equation,

We get

3 x1 + 4y = 7

4y = 7 − 3 4 = 4Y

Y = I

Thus x = 1 and y = 1 is the solution of 3x + 4y = 7

Substituting x = 2 in the given equation,

we get 3×2 + 4y = 7

4y = 7 − 6

y = 1/4

Thus x = 2 and   y = 1/4 is the solution of 3x + 4y = 7

(ii) We are given, x = 6y

Substituting x =0 in the given equation,

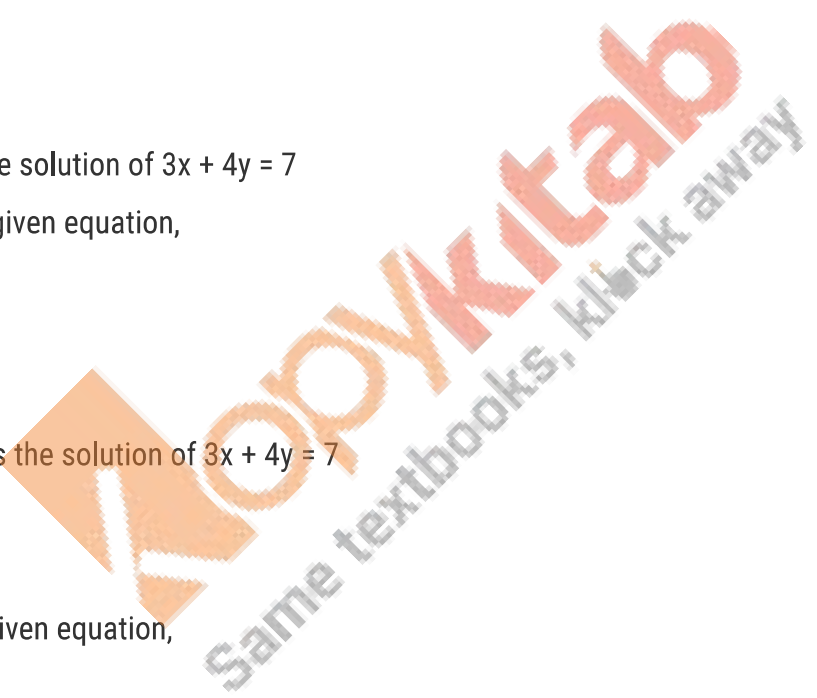we get 0 = 6y

6 y = 0

y = 0

Thus x = 0,   => Solution (0,0)

Substituting x=6

6 = 6y

y = 6/6

y = 1   => Solution (6,1)

(iii) We are given $x + \pi y = 4$

Substituting x = 0 in the given equation,

We get $0 + \pi y = 4$

$\pi y = 4$

$y = \frac{4}{\pi}$

=>   Solution = $(0, \frac{4}{\pi})$

Substituting y = 0 in the given equation, we get

x + 0 = 4

x = 4

=>   Solution = (4, 0)

(iv) We are given $\frac{2}{3}x - y = 4$

Substituting x = 0 in the given equation, we get

0 − y = 4

y = − 4

Thus x = 0 and y = − 4 is a solution

Substituting x = 3 in the given equation, we get

$\frac{2}{3} \times 3 - y = 4$

2 − y = 4

y = 2 − 4

y = -2

Thus x = 3 and y = -2 is a solution

Q 2 : Write two solutions of the form x = 0, y = a and x = b, y = 0 for each of the following equations : (i) 5x − 2y =10 (ii) -4x + 3y =12 (iii) 2x + 3y = 24

A 2 :

(i) We are given,

5x − 2y = 10

Substituting x = 0 in the given equation,

We get;

5×0 − 2y = 10

− 2y = 10

− y = 10/2

y= − 5

Thus x =0 and y = -5 is the solution of 5x-2y = 10

Substituting y = 0 in the given equation, we get 5x −2 x 0 = 10

5x = 10

x = 10/2

x = 2

Thus x =2 and y = 0 is a solution of 5x-2y = 10

(ii) We are given, − 4x + 3y = 12

Substituting x = 0 in the given equation,

we get;

-4×0 + 3y = 12

3y = 12

y = 4

Thus x = 0 and y = 4 is a solution of the -4x + 3y = 12

Substituting y = 0 in the given equation, we get;

-4 x + 3 x 0 = 12

− 4x = 12

x =-12/4

x = -3

Thus x = -3 and y =0 is a solution of -4x + 3y = 12

(iii) We are given, 2x + 3y = 24

Substituting x = 0 in the given equation, we get;

2 x 0 + 3y = 24

3y =24

y = 24/3

y = 8

Thus x = 0 and y = 8 is a solution of 2x+ 3y = 24

Substituting y = 0 in the given equation, we get;

2x +3 x 0 = 24

2x = 24

x = 24/2

x =12

Thus x =12 and y = 0 is a solution of 2x + 3y = 24

Q3: Check which of the following are solutions of the equation 2x − y = 6 and Which are not :

(i) (3 , 0)　　　　　*(ii) (0 , 6)*　　　　　*(iii) (2 , – 2)*　　*(iv) ($\sqrt{3}$,0)*　*(v) ($\frac{1}{2}$,-5)*

A3:

We are given, $2x - y = 6$

(i) In the equation $2x - y = 6$,

We have L.H.S = $2x - y$ and R.H.S = 6

Substituting $x = 3$ and $y = 0$ in $2x - y$,

We get L.H.S = $2 \times 3 - 0 = 6$

=> L.H.S = R.H.S

=>(3,0) is a solution of $2x - y = 6$.

(ii) In the equation $2x - y = 6$,

We have L.H.S= $2x - y$ and R.H.S=6

Substituting $x = 0$ and $y = 6$ in $2x - y$

We get L.H.S = $2 \times 0 - 6 = -6$

=> L.H.S$\neq$ R.H.S

=> (0,6) is not a solution of $2x - y = 6$.

(iii) In the equation $2x - y = 6$,

We have L.H.S = $2x - y$ and R.H.S = 6

Substituting $x = 2$ and $y = -2$ in $2x - y$,

We get L.H.S = $2 \times 2 - (-2) = 6$

=> L.H.S = R.H.S

=> (2,-2) is a solution of $2x - y = 6$.

(iv) In the equation $2x - y = 6$,

We have L.H.S = $2x - y$ and R.H.S=6

Substituting $x = \sqrt{3}$ and $y = 0$ in $2x - y$,

We get L.H.S = $2 \times \sqrt{3} - 0$

=> L.H.S $\neq$ R.H.S

=>($\sqrt{3}$,0)is not a solution of $2x - y = 6$.

(v) In the equation $2x - y = 6$,
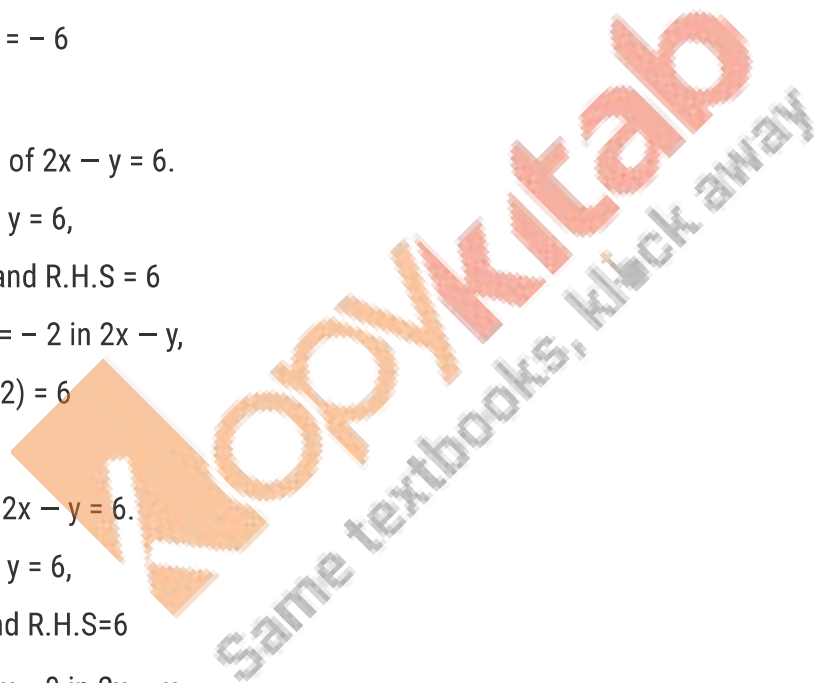
We have L.H.S = $2x - y$ and R.H.S = 6

Substituting $x = 1/2$ and $y = $ in $2x - y$, we get

L.H.S = $2 \times (1/2) - (-5)$

=>$1 + 5 = 6$

=> L.H.S = R.H.S

=> $(\frac{1}{2}, -5)$ is a solution of $2x - y = 6$.

Q4: If x = -1, y = 2 is a solution of the equation 3x + 4y = k, find the value of k.

A4 :

We are given, $3x + 4y = k$

Given that, $(-1,2)$ is the solution of equation $3x + 4y = k$.

Substituting $x = -1$ and $y = 2$ in $3x + 4y = k$,

We get; $3x - 1 + 4 x 2 = k$

$K = -3 + 8$

$k = 5$

Q 5 : Find the value of λ, if x = −λ and y = $\frac{5}{2}$ is a solution of the equation x + 4y -7 = 0

A 5 :

We are given,

$x + 4y - 7 = 0$

$(-λ,- 5)$ is a solution of equation $3x + 4y = k$

Substituting $x = -λ$ and $y = \frac{5}{2}$ in $x + 4y - 7 = 0$,

We get; $-λ + 4 x (\frac{5}{2}) - 7 = 0$

$-λ + 4 x \frac{5}{2} - 7 = 0$

$λ = 10 - 7$

$λ = 3$

Q 6 : If x = 2a + 1 and y = a -1 is a solution of the equation 2x − 3y + 5 = 0, find the value of a.

A 6:

We are given, $2x - 3y + 5 = 0$

$(2a + 1, a - 1)$ is the solution of equation $2x - 3y + 5 = 0$.

Substituting $x = 2a + 1$ and $y = a - 1$ in $2x - 3y + 5 = 0$,

We get $2 x 2a + (1 - 3) x a - 1 + 5 = 0$

=> $4a + 2 - 3a + 3 + 5 = 0$

=> $a + 10 = 0$

=> $a = -10$

Q 7 : If x = 1 and y = 6 is a solution of the equation 8x − ay + a² = 0, find the values of a.

A 7 :

We are given,

$8x - ay + a^2 = 0$

$(1, 6)$ is a solution of equation $8x - ay + a^2 = 0$

Substituting $x = 1$ and $y = 6$ in $8x - ay + a^2 = 0$, we get

$8 \times 1 - a \times 6 + a^2 = 0$

$\Rightarrow a^2 - 6a + 8 = 0$

Using quadratic factorization

$a^2 - 4a - 2a + 8 = 0$

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

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

$a = 2, 4$