MATHS

Q1. Find the LCM of 120 and 630.

Ans Factors of 120 =

$$\begin{array}{r|l} 2 & 120 \\ \hline 2 & 60 \\ \hline 2 & 30 \\ \hline 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

Factors of 630 =

$$\begin{array}{r|l} 2 & 630 \\ \hline 3 & 315 \\ \hline 3 & 105 \\ \hline 5 & 35 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$120 = 2^3 \times 3 \times 5$

$630 = 2 \times 3^2 \times 5 \times 7$

$\text{LCM}(120, 630) = 2^3 \times 3^2 \times 5 \times 7$

$= 8 \times 9 \times 35$

$= 72 \times 35$

$= 2520$

Q2. Prove that $\sqrt{5}$ is an irrational number.

Ans Let us assume that $\sqrt{5}$ is a rational number.

Therefore $\sqrt{5}$ can be written in the form of $\frac{P}{q}$ where P and q are co-prime integers and $q \neq 0$.

$\sqrt{5} = \frac{p}{q}$

$(\sqrt{5})^2 = \left(\frac{p}{q}\right)^2$

$5 = \frac{p^2}{q^2}$

$p^2 = 5q^2$ — (i)

5 divides p^2. So, 5 also divides p.

Let $p = 5m$ (For some integer m)

$(5m)^2 = 5q^2$ (From Eq. (i))

$25m^2 = 5q^2$

$\frac{\cancel{25}^{5} m^2}{\cancel{5}} = q^2$

$5m^2 = q^2$

5 divides q^2. So, 5 also divides q.

It means both p and q have a common factor 5. This contradicts our assumption that p and q are co-prime integers.
So, our assumption is wrong.
Hence, we conclude that $\sqrt{5}$ is an irrational number.

Q3. If -1 is a zero of the polynomial $p(x) = x^2 - 7x - 8$, then the other zero is:

a) 8 ✓
b) -7
c) 1
d) -8

Q4. What is the quadratic polynomial whose sum and product of zeroes are $\sqrt{2}$ and $\frac{1}{3}$ respectively?

a) $3x^2 - \sqrt{2}x + 1$

b) $3x^2 + \sqrt{2}x + 1$

c) $3x^2 + 3\sqrt{2}x - 1$

d) $3x^2 - 3\sqrt{2}x + 1$

Q5. The sum and product of zeroes of the polynomial $x^2 - 3$ are respectively:

a) $-3, 0$

b) $0, -3$

c) $0, 3$

d) $3, 0$

Q6. The zeroes of the polynomial $f(x) = 4x^2 - 12x + 9$ are:

a) $\frac{3}{2}, \frac{3}{2}$

b) $\frac{3}{2}, \frac{-3}{2}$

c) $3, 4$

d) $-3, -4$

Q7. The number of zeroes of the polynomial $p(x)$ as shown in the figure is:

a) 3

b) 2

c) 1

d) 0

Q8. Find the quadratic polynomial whose zeroes are 0 and $\sqrt{5}$.

Ans General quadratic polynomial :

$ax^2 + bx + c = 0$

Given zeroes : 0 and $\sqrt{5}$.

Sum of zeroes $= \frac{-b}{a} = 0 + \sqrt{5}$

$\frac{-b}{a} = \sqrt{5}$

$\frac{b}{a} = -\sqrt{5}$

Product of zeroes $= \frac{c}{a} = 0 \times \sqrt{5}$

$\frac{c}{a} = 0$

Let $a = 1$, then $b = -\sqrt{5}$ and $c = 0$

Therefore, required quadratic polynomial is :

$x^2 - \sqrt{5}x = 0$

Q9. Find the quadratic polynomial whose sum and product of zeroes are $-\sqrt{2}$ and $\sqrt{2}$ respectively.

Ans General form of quadratic polynomial is $ax^2 + bx + c = 0$.

ATQ:

Sum of zeroes $= -\sqrt{2}$

$\frac{+b}{a} = +\sqrt{2}$

$b = a\sqrt{2}$ — (i)

Product of zeroes $= \sqrt{2}$

$\frac{c}{a} = \sqrt{2}$

$c = a\sqrt{2}$ — (ii)

Let $a = 1$

From Eqs. (i) and (ii), we get,

$b = \sqrt{2}$ and $c = \sqrt{2}$

So, required polynomial is given below :

$x^2 + \sqrt{2}x + \sqrt{2} = 0$

Q10. Find the zeroes of the quadratic polynomial $4x^2 - 4x - 8$ and verify the relationship between the zeroes and coefficients.

Ans $4x^2 - 4x - 8 = 0$

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

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

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

$4x + 4 = 0$

$4x = -4$

$x = \frac{-\cancel{4}^{1}}{\cancel{4}} = -1$

$\alpha = -1$

$x - 2 = 0$

$x = 2$

$\beta = 2$

∴ Therefore, zeroes of given polynomial are $\alpha = -1$ and $\beta = 2$.

Verification :

Sum of zeroes $= \frac{-b}{a}$

$\alpha + \beta = \frac{\cancel{-}(\cancel{-}4)}{4}$

$-1 + 2 = \frac{\cancel{4}^{1}}{\cancel{4}}$

$1 = 1$

Product of zeroes $= \frac{c}{a}$

$\alpha\beta = \frac{c}{a}$

$-1(2) = \frac{-\cancel{8}^{2}}{\cancel{4}}$

$-2 = -2$

Q11. The sum of the zeroes of a quadratic polynomial is $\frac{1}{5}$ and their product is $\frac{-3}{2}$. Find the quadratic polynomial.

Ans General form of quadratic polynomial is $ax^2+bx+c=0$.

ATQ,

Sum of zeroes $= \frac{1}{5}$

$$\frac{-b}{a} = \frac{1}{5}$$

$$b = \frac{-a}{5} \qquad \text{— (i)}$$

Product of zeroes $= \frac{-3}{2}$

$$\frac{c}{a} = \frac{-3}{2}$$

$$c = \frac{-3a}{2} \qquad \text{— (ii)}$$

Let $a=1$

Then $b = \frac{-1}{5}$ and $c = \frac{-3}{2}$ (From Eqs. (i) and (ii))

So, required polynomial is given below:

$$x^2 - \frac{x}{5} - \frac{3}{2} = 0$$

Q12. Find solution of the given pair of equations graphically:

$x + 2y = 11$

$3x - 6y = 9$

Ans Given, $x+2y-11=0$ — (i)

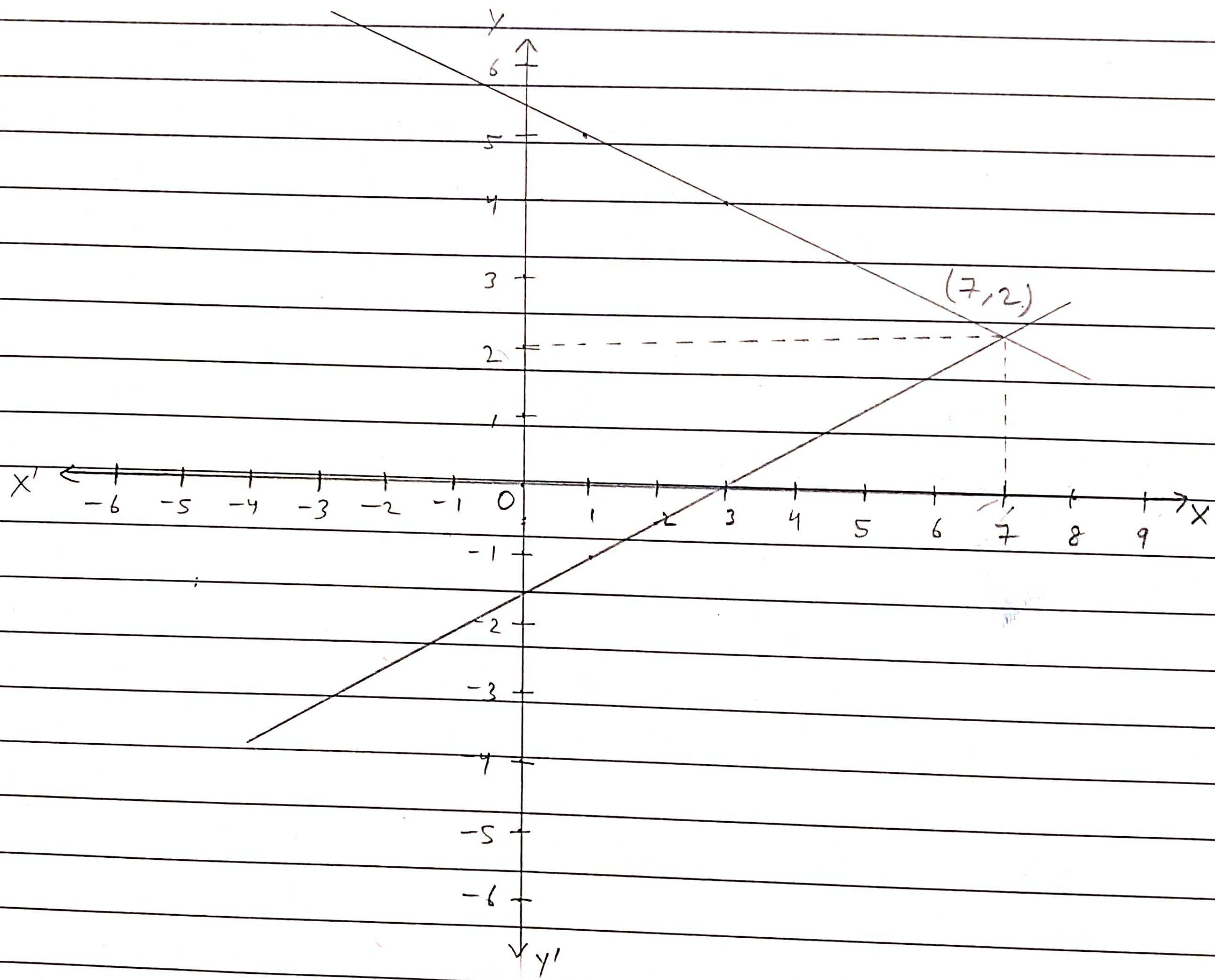
$3x-6y-9=0$ — (ii)

For Eq. (i),

x	3	1	5
y	4	5	3

For Eq. (ii),

x	1	2	0
y	−1	−0.5	−1.5



∴ Solution of these linear equations is $x = 7$ and $y = 2$.

Q13. The cost of 2kg of apples and 1 kg of grapes on a day was found to be Rs 160. After a month, the cost of 4kg of apples and 2kg of grapes is Rs 300. Represent the situation algebraically.

Ans Let the cost of one kg of apples and oranges be ₹x and ₹y respectively.

ATQ,

$2x + y = 160$

$4x + 2y = 300$

Q14. Find the solution of the given pair of equations graphically:

$x - 2y = 2$

$5x - 10y = 10$

Ans Given, $x - 2y - 2 = 0$ — (i)

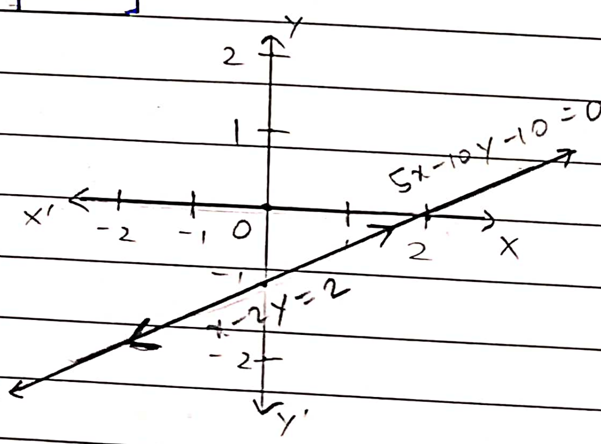
$5x - 10y - 10 = 0$ — (ii)

For Eq. (i),

x	0	2	-2
y	-1	0	-2

For Eq. (ii),

x	0	2	-2
y	-1	0	-2



∴ Therefore, there are infinitely many solutions to given pair of equations.

Q15. The two zeroes of a quadratic polynomial are -3 and 7. Find the sum and product of the zeroes. What is the value of coefficient b in the quadratic polynomial?

Ans Given, zeroes of a quadratic Polynomial : $\alpha = -3$ and $\beta = 7$.

Sum of zeroes $= \alpha + \beta = -3 + 7 = 4$

Product of zeroes $= \alpha\beta = -3(7) = -21$

Sum of zeroes $= 4$

$$\frac{-b}{a} = 4$$

$$\frac{-b}{a} = \frac{4}{1}$$

$$\frac{b}{a} = \frac{-4}{1}$$

Product of zeroes $= -21$

$$\frac{c}{a} = \frac{-21}{1}$$

Therefore, $a = 1$, $b = -4$ and $c = -21$.

$\therefore$ Hence, coefficient b is -4.

Q16. For the following linear pair of equation, write the values of a_1, a_2, b_1, b_2, c_1 and c_2.

$5x + 4y - 7 = 0$

$2x - 9y + 4 = 0$

Ans Given pair of linear equations are:

$5x + 4y - 7 = 0$

$2x - 9y + 4 = 0$

So, $a_1 = 5$, $b_1 = 4$, $c_1 = -7$, $a_2 = 2$, $b_2 = -9$ and $c_2 = 4$

Q17. IF LCM(32,12) = 96 then Find HCF(32,12).

Ans

$$HCF(a,b) \times LCM(a,b) = a \times b$$

$$HCF(32,12) \times LCM(32,12) = 32 \times 12$$

$$HCF(32,12) \times 96 = 32 \times 12$$

$$HCF(32,12) = \frac{\overset{4}{\cancel{32}} \times \overset{1}{\cancel{12}}}{\underset{8}{\cancel{96}}}$$

$$HCF(32,12) = 4$$

Q18. Given that $\sqrt{3}$ is an irrational number, show that $(2+\sqrt{3})$ is an irrational number.

Ans Given that $\sqrt{3}$ is an irrational number.

Let us assume that $(2+\sqrt{3})$ is a rational number.

So, $(2+\sqrt{3})$ can be written as $\frac{p}{q}$, where p and q are co-prime integers and $q \neq 0$.

$$2+\sqrt{3} = \frac{p}{q}$$

$$\sqrt{3} = \frac{p}{q} - 2$$

On the L.H.S $\sqrt{3}$ is an irrational number while on the R.H.S $\left(\frac{p}{q} - 2\right)$ is a rational number.

This contradicts our assumption that $(2+\sqrt{3})$ is rational.

Hence, we conclude $(2+\sqrt{3})$ is an irrational number.

Q19. Express the Following as a product of their prime Factors.

a) 1296

Ans

$$\begin{array}{r|l} 2 & 1296 \\ \hline 2 & 648 \\ \hline 2 & 324 \\ \hline 2 & 162 \\ \hline 3 & 81 \\ \hline 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$1296 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 = 2^4 \times 3^4$

b) 8232

Ans

$$\begin{array}{r|l} 2 & 8232 \\ \hline 2 & 4116 \\ \hline 2 & 2058 \\ \hline 3 & 1029 \\ \hline 7 & 343 \\ \hline 7 & 49 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$8232 = 2 \times 2 \times 2 \times 3 \times 7 \times 7 \times 7 = 2^3 \times 3 \times 7^3$

Q20. Find the HCF of 40 and 126.

Ans $40 = \begin{array}{r|l} 2 & 40 \\ \hline 2 & 20 \\ \hline 2 & 10 \\ \hline 5 & 5 \\ \hline & 1 \end{array} = 2^3 \times 5$

$$126 = \begin{array}{r|l} 2 & 126 \\ \hline 3 & 63 \\ \hline 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array} = 2 \times 3^2 \times 7$$

$40 = 2^3 \times 5$

$126 = 2 \times 3^2 \times 7$

$HCF(40,126) = 2^1 \times 3^0 = 2$

Q21. Find the LCM and HCF of 404 and 96.
Also, verify that "LCM x HCF = Product of the numbers."

Ans

$$404 = \begin{array}{r|l} 2 & 404 \\ \hline 2 & 202 \\ \hline 101 & 101 \\ \hline & 1 \end{array} = 2^2 \times 101$$

$$96 = \begin{array}{r|l} 2 & 96 \\ \hline 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array} = 2^5 \times 3$$

$LCM(96, 404) = 2^5 \times 3 \times 101 = 32 \times 303 = 9696$

$HCF(96, 404) = 2^2 = 4$

Verification:

HCF x LCM = Product of the numbers

$9696 \times 4 = 96 \times 404$

$38784 = 38784$

Q22. Which of the Following expressions are polynomials?

a) $x^2 + 3x - 5$

b) $\sqrt{2}x^3 + x - 3$

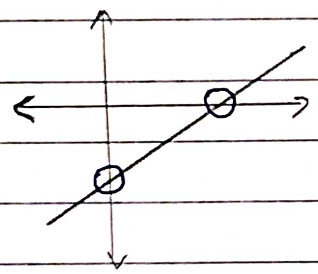
c) $4\sqrt{x} - x + 1$

d) $x^{-2} + x + 2$

e) $x^2 + \frac{3}{x} - 4$

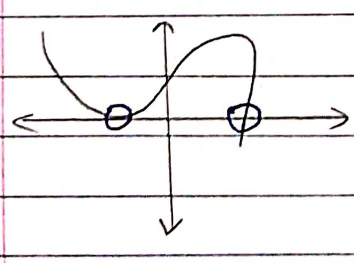
Q23. Encircle the zeroes of $y = p(x)$ on the given graphs and write the number of the zeroes:

1)



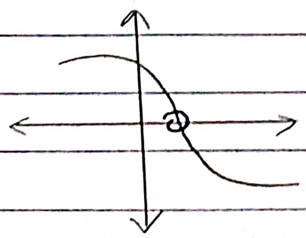
No. of zeroes - 2

2)

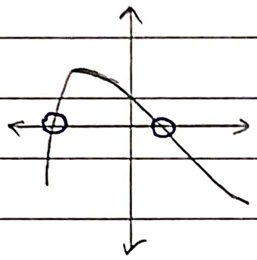


No. of zeroes - 2

3)



No. of zeroes - 1

4)  No. of zeroes - 2

Q24. Find the sum and product of the zeroes of the following polynomials.

a) $2x^2 + 2x - 4$

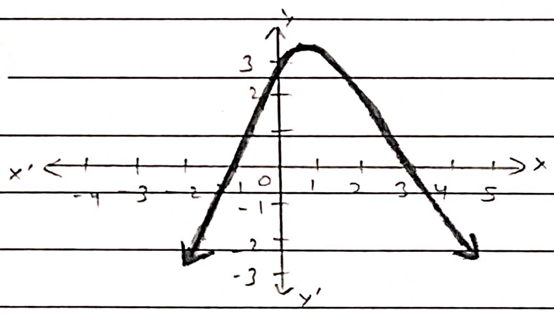
Ans: Sum of zeroes $= \frac{-b}{a} = \frac{-\cancel{2}^{1}}{\cancel{2}} = -1$

Product of zeroes $= \frac{c}{a} = \frac{-\cancel{4}^{2}}{\cancel{2}} = -2$

b) $x^2 - x - 6$

Ans: Sum of zeroes $= \frac{-b}{a} = \frac{-(-1)}{1} = 1$

Product of zeroes $= \frac{c}{a} = \frac{-6}{1} = -6$

Q25. 

1. The given graph intersects x-axis at two points.
2. No. of zeroes of the polynomial represented by the graph = two.
3. Degree of the polynomial = 2
4. Type of polynomial: cubic / Linear / Quadratic = Quadratic.

Q26. The HCF of two numbers is 18 and their product is 12960. Find their LCM.

Ans LCM × HCF = Product of two numbers

LCM × 18 = 12960

LCM = $\frac{\cancel{12960}\ \cancel{1440}\ 720}{\cancel{18}\ \cancel{2}}$

LCM = 720

Q27. Write all factors of 24 & 36.

Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24

Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36

Which of these are prime?

Prime Factors of 24 = 2, 3

Prime Factors of 36 = 2, 3

Now write 24 & 36 as product of their prime factors.

24 = 2×2×2×3

36 = 2×2×3×3

Q28. Find LCM and HCF of 15, 24 & 30.

Ans LCM of 15, 24 and 30 =

2	15, 24, 30
2	15, 12, 15
2	15, 6, 15
3	15, 3, 15
5	5, 1, 5
	1, 1, 1

= 2×2×2×3×5

= 8×15 = 120

3	15		2	24		2	30
5	5		2	12		3	15
	1		2	6		5	5
			3	3			1
				1			

$15 = 1 \times 3 \times 5$

$24 = 1 \times 2 \times 2 \times 2 \times 3$

$30 = 1 \times 2 \times 3 \times 5$

HCF of 15, 24 and 30 = $1 \times 3 = 3$

Q29. Express 12600 as product of its prime

a) $2^3 \times 3^3 \times 5 \times 7$

b) $2^3 \times 3 \times 5$

c) ✓ $2^3 \times 3^2 \times 5^2 \times 7$

d) $2 \times 3^2 \times 5^2 \times 7^2$

Q30. What will be the LCM of 168 and 126?

a) 258

b) 256

c) 252

d) 250

Ans: LCM of 168 and 126 is 504, all options are wrong.

Q31. What will be the LCM × HCF for numbers 30 and 70?

a) 2000

b) ✓ 2100

c) 210

d) 100

Q32. What will be the LCM of $2^3 \times 3^2$ and $2^2 \times 3^2$?

a) $2^3 \times 3^2$ ✓

b) $2^3 \times 3^3$

c) 2×3

d) $2^2 \times 3$

Q33. The LCM and HCF of two numbers are 360 and 9 respectively. If one number is 45, find the other number.

Ans

$\text{LCM} \times \text{HCF} = ab$

$360 \times 9 = a \times 45$

$a = \dfrac{\overset{72}{\cancel{360}} \times \cancel{9}}{\cancel{45}\,\cancel{5}}$

$a = 72$

Q34. Show that $\sqrt{2}$ is an irrational number.

Ans Let us assume to the contrary that $\sqrt{2}$ is a rational number.

$\sqrt{2} = \dfrac{p}{q}$, where p and q are co-prime integers and $q \neq 0$.

$(\sqrt{2})^2 = \left(\dfrac{p}{q}\right)^2$

$2 = \dfrac{p^2}{q^2}$

$2q^2 = p^2$

2 divides p^2. So, 2 also divides p.

Let $p = 2k$, for some integer k.

$p^2 = 2q^2$

$(2k)^2 = 2q^2$

$4k^2 = 2q^2$

$\frac{{}^{2}\cancel{4}k^2}{\cancel{2}} = q^2$

$2k^2 = q^2$

2 divides q^2. So, 2 also divides q.

Therefore, p and q both have a common factor 2.

This contradicts our assumption.

Hence, we conclude that $\sqrt{2}$ is an irrational number.

Q35. Show that $7-\sqrt{5}$ is an irrational number, given that $\sqrt{5}$ is an irrational number.

Ans Let us assume that $(7-\sqrt{5})$ is a rational number.

$7-\sqrt{5} = \frac{p}{q}$, where p and q are co-prime integers and $q \neq 0$.

$7 - \frac{p}{q} = \sqrt{5}$

On the L.H.S, we have $7 - \frac{p}{q}$ which is rational according to our assumption. While on the R.H.S, we have $\sqrt{5}$, that is irrational.

So, this contradicts the fact that $(7-\sqrt{5})$ is rational.

Hence, $(7-\sqrt{5})$ is an irrational number.

Q36. Three bells ring at an interval of 4, 7 and 14 minutes. All three rang at 5pm. Will they ring together again?

Ans LCM of 4, 7 and 14 =

$$\begin{array}{r|l} 2 & 4, 7, 14 \\ \hline 2 & 2, 7, 7 \end{array}$$

$$7 \,|\, 1, 7, 7$$
$$ 1, 1, 1$$

$= 2 \times 2 \times 7$

$= 28$

Yes, they will ring together again at 5:28 pm.

Q37. Solve $5x^2 + 3x - 2$

Ans

$5x^2 + 3x - 2 = 0$

$5x^2 + 5x - 2x - 2 = 0$

$5x(x+1) - 2(x+1) = 0$

$(5x-2)(x+1) = 0$

$5x - 2 = 0$	$x + 1 = 0$
$x = \frac{2}{5}$	$x = -1$

$\therefore$ Roots of $5x^2 + 3x - 2$ are $x = \frac{2}{5}$ and $x = -1$.

Q38. Find the values of a, b and c for the equation $5x^2 + 3x - 6$.

Ans Given, $5x^2 + 3x - 6$.

So, $a = 5$, $b = 3$ and $c = -6$.

Q39. Solve $2x^2 - 8x + 6$.

Ans $2x^2 - 8x + 6 = 0$

$2x^2 - 2x - 6x + 6 = 0$

$2x(x-1) - 6(x-1) = 0$

$(2x-6)(x-1) = 0$

$2x-6=0$ | $x-1=0$

$2x=6$ | $x=1$

$x=\frac{\cancel{6}^{3}}{\cancel{2}}=3$

$\therefore$ Solution to the equation are $x=1$ and $x=3$.

Q40. Verify the relation between the zeroes and coefficients of the polynomial $x^2+2x-15$.

Ans

$x^2+2x-15=0$

$x^2+5x-3x-15=0$

$x(x+5)-3(x+5)=0$

$(x-3)(x+5)=0$

$x-3=0$ | $x+5=0$

$x=3$ | $x=-5$

$\alpha=3$ | $\beta=-5$

$\therefore$ Zeroes are $\alpha=3$ and $\beta=-5$.

Verification:

Sum of zeroes $=\frac{-b}{a}$

$\alpha+\beta=\frac{-b}{a}$

$3+(-5)=\frac{-2}{1}$

$-2=-2$

Product of zeroes $=\frac{c}{a}$

$\alpha\beta=\frac{c}{a}$

$3(-5)=\frac{-15}{1}$

$-15=-15$

Activity Sheet 1

Pair of Linear Equations in two variables graphical solution

Objective: To Find the solution of the given pair of linear equations graphically.

$$2x + 3y = 10$$

$$4x + 6y = 20$$

Material Required: Pencil, scale, graph paper.

Required steps:

1. Express the given equation $2x + 3y = 10$ in terms of x as $2x = 10 - 3y$.
2. Put $y = 2$ in $2x + 3y = 10$ and solve it to get $x = 2$.
3. Now give any value to y such as $0, 1, 2, 3 \ldots\ldots$ and find the value of x.
4. Record it in the following table:

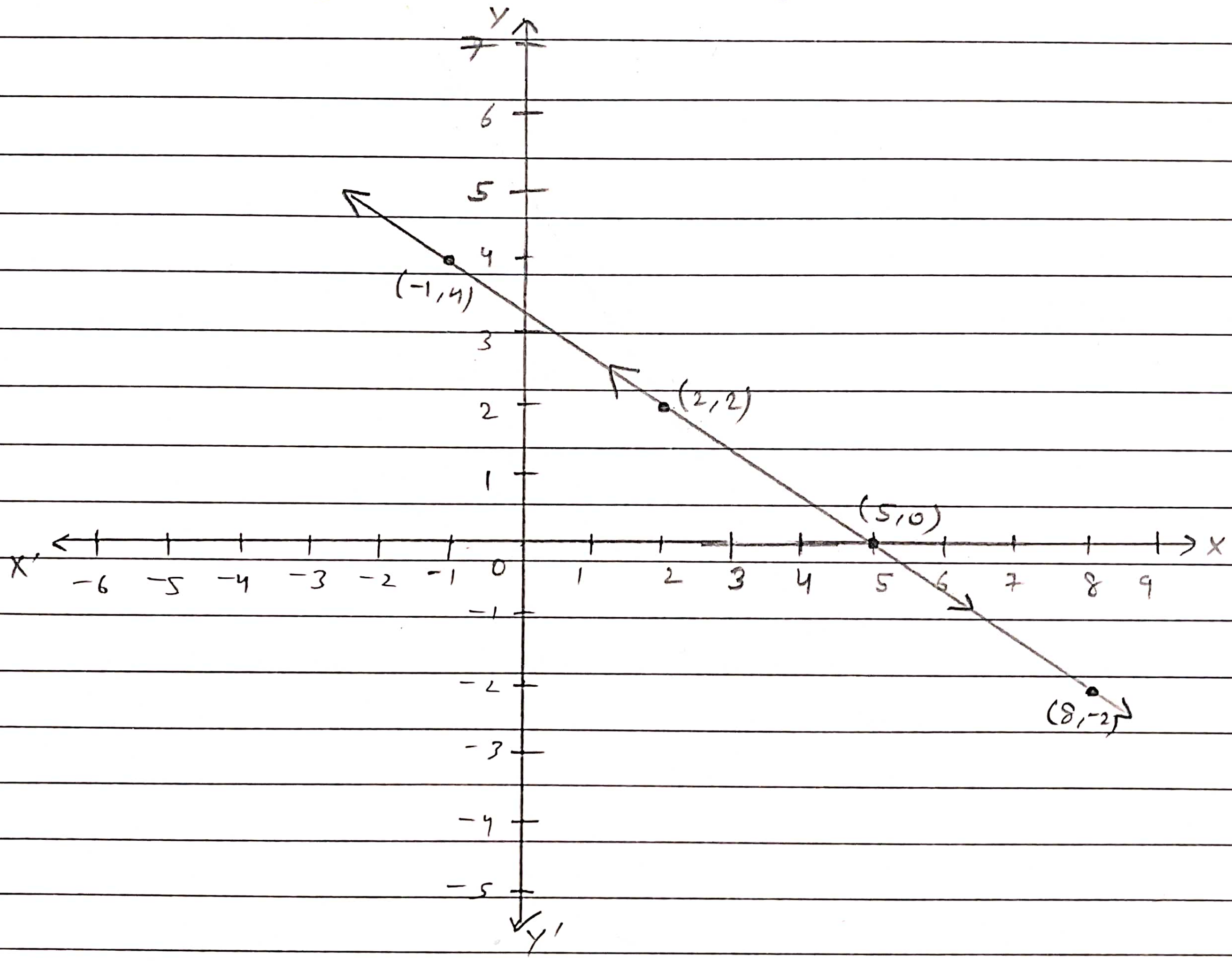
x	2	5
y	2	0

5. Plot the points of step 4 on a graph paper.
6. Prepare the table as above for the other equation $4x + 6y = 20$.
7. For Equation $4x + 6y = 20$, we get the following table:

x	-1	8
y	4	-2

8. Again, plot there points on the same graph paper as step 5.
9. Find the solution from the graph accordingly.

Observation: The two lines represented by the given equations are same. These lines are called co-incident lines and they intersect at many points as shown in graph below.



Result: Since the two lines are coincident, so the given equations has infinitely many solutions.

Activity Sheet - 2

Pair of Linear Equations in two variables: Graphical solution

Objective: To find the solution of the given pair of linear equations graphically:

$$3x - 2y = 7$$

$$4x - 7y = 5$$

Material Required: Pencil, scale, graph paper.

Required steps:

1. Express the given equation $3x - 2y = 7$ in terms of x as $3x = 7 + 2y$.
2. Put $y = 1$ in $3x = 7 + 2y$ and solve it to get $x = 3$.
3. Now give any value to y such as $0, 1, 2, 3, \ldots$ and find the value of x.
4. Record it in the following table as:

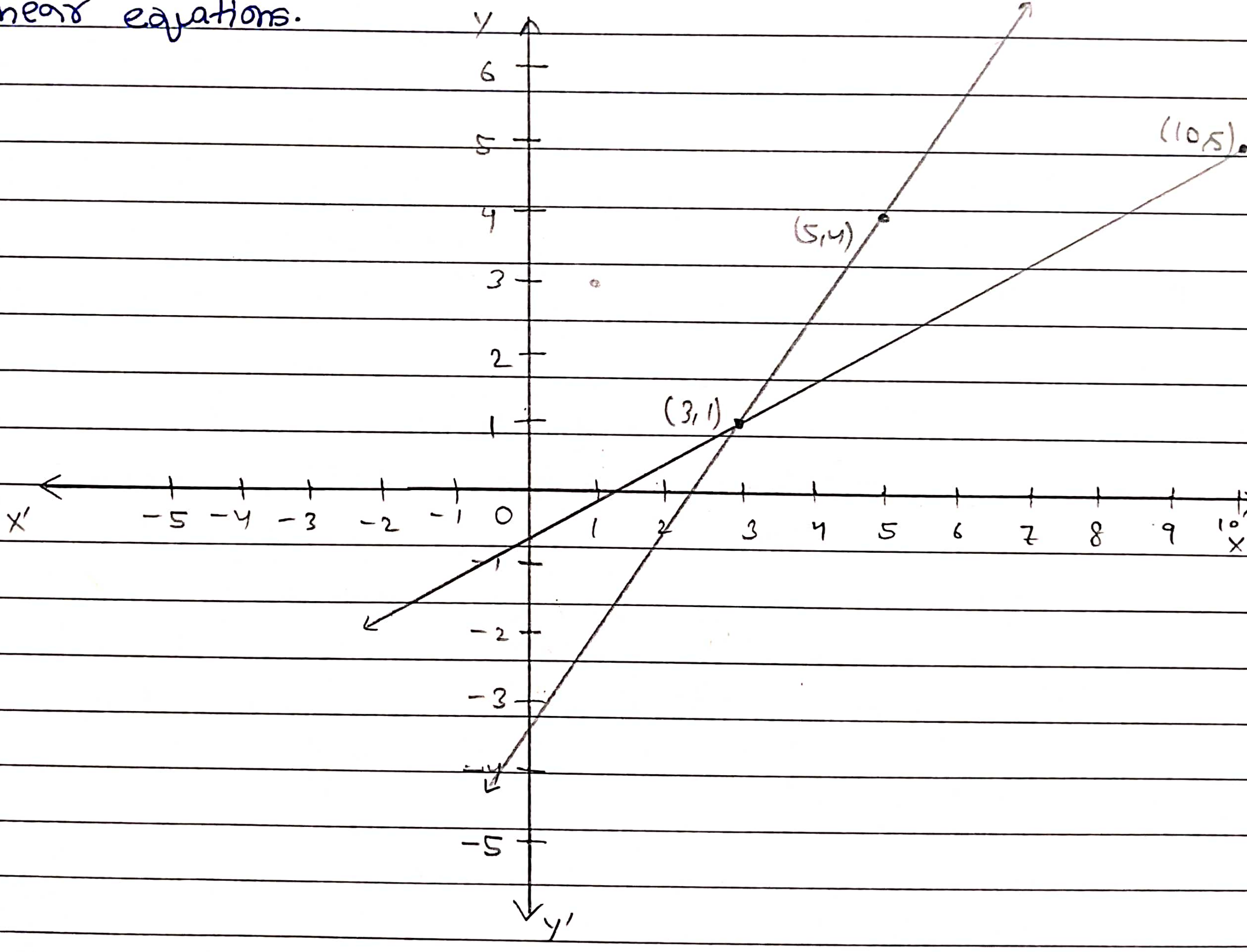
x	3	5
y	1	4

5. Plot the points of step 4 on a graph paper.
6. Prepare the table as above for the other equation $4x - 7y = 5$.
7. For equation $4x - 7y = 5$, we get the following table:

x	3	10
y	1	5

8. Again, plot these points on the same graph paper as step 5.
9. Find the solution from the graph accordingly.

Observation: The two lines represented by the given equations intersect each other. The point of intersection of these lines as in graph is shown below.
This point of intersection is the solution of the given pair of linear equations.



Result: Since the two lines intersect each other, so the solution of the given equations is unique i.e. only one solution. From the graph, we see that the point of intersection is (3,1). Hence the solution is $x = 3$ and $y = 1$.

Activity Sheet (HCF) - 3

Objective: To find the HCF of the numbers.

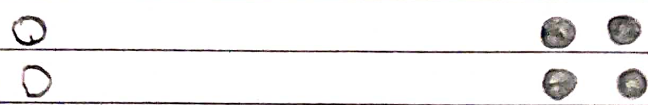
Material required: Coloured buttons / balls.

Procedure:

1. Let the numbers be a(=6) and b(=10). To find the HCF of 6 and 10, we take 6 white buttons and 10 black buttons. First find the smallest number in the given numbers and remove buttons equal to smaller number from the greater. Here $6 < 10$, so remove 6 black buttons from 10 black buttons.

2. We are left with 6 white buttons and 4 black buttons. As in step above, remove 4 white buttons from 6 white buttons.

3. Now, we are left with 2 white buttons and 4 black buttons. Since, $2 < 4$, so remove 2 black buttons from 4 black buttons.



Note: Continue the process until both the numbers are same.

Demonstration: Count the number of white buttons and black buttons. We find that both the buttons are equal in numbers.

Observations:

1. The smallest factor that can divide both 6 and 10 is 2.
2. HCF (6,10) = 2.

Now complete the table by finding HCF of two different numbers.

S.No.	Number (a)	Number (b)	HCF (a,b)
1.	6	10	2
2.	15	38	3
3.	14	17	1
4.	12	13	1

Activity Sheet - 4

Objective: To find the LCM of two numbers.

Material Required: White drawing sheet, colours, glue, scissors, cardboard, pen/pencil.

Method of Construction:

1. Make three grids each of size 10 cm x 10cm and write numbers 1 to 100 on one grid as shown in the figure.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

2. Stick this grid on a cardboard base of suitable size. It is our base grid.

3. Remove multiples of one of the numbers 'a' (say 4) from one grid by cutting. The grid when placed on the base grid

will look as shown in the Following Figure.

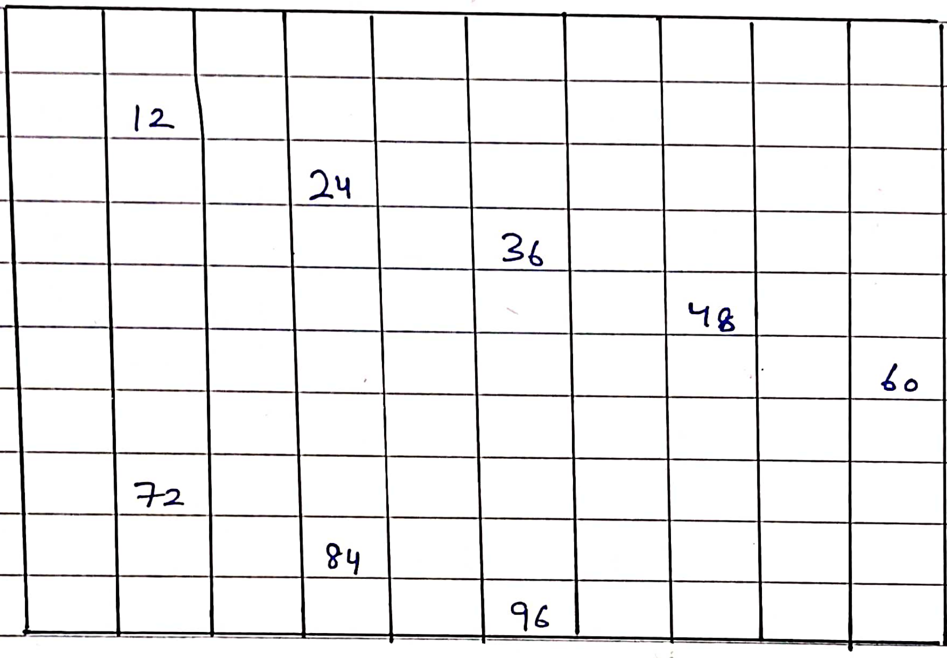
			4				8		
	12				16				20
			24				28		
	32				36				40
			44				48		
	52				56				60
			64				68		
	72				76				80
			84				88		
	92				96				100

4. Remove multiples of another number '6' (say 6) from ~~from~~ another grid, by cutting. The grid when placed on the base grid will look as shown in the Figure on below:

					6				
	12						18		
			24						30
					36				
	42						48		
			54						60
					66				
	72						78		
			84						90
					96				

Demonstration:

1. Place both the cut out grids one above the other over the base grid as shown in the figure.



2. The common multiples of 4 and 6 visible through the holes are 12, 24, 36, 48, 60, 72, 84, 96.
3. The smallest of these common multiples, i.e. 12, is the LCM of 6 and 4.

Observation:

1. The smallest visible common multiple of 4 and 6 is 12.
2. LCM (4, 6) = 12.

Now complete the table by making different grids:

S.No.	Number		LCM(a,b)
	a	b	
1	4	6	12
2	2	3	6
3	5	8	40
4	2	4	4