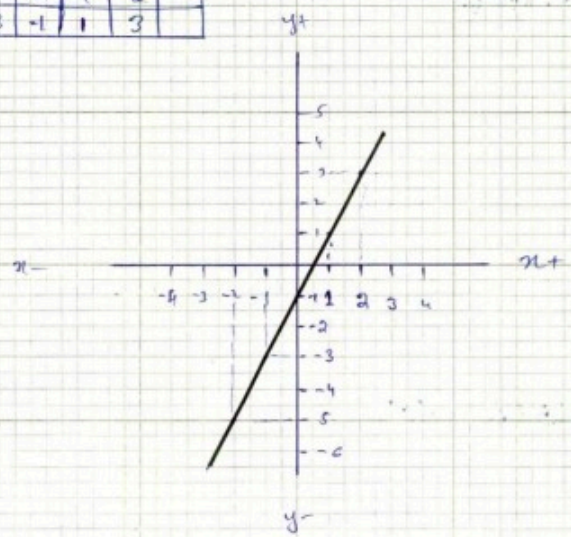
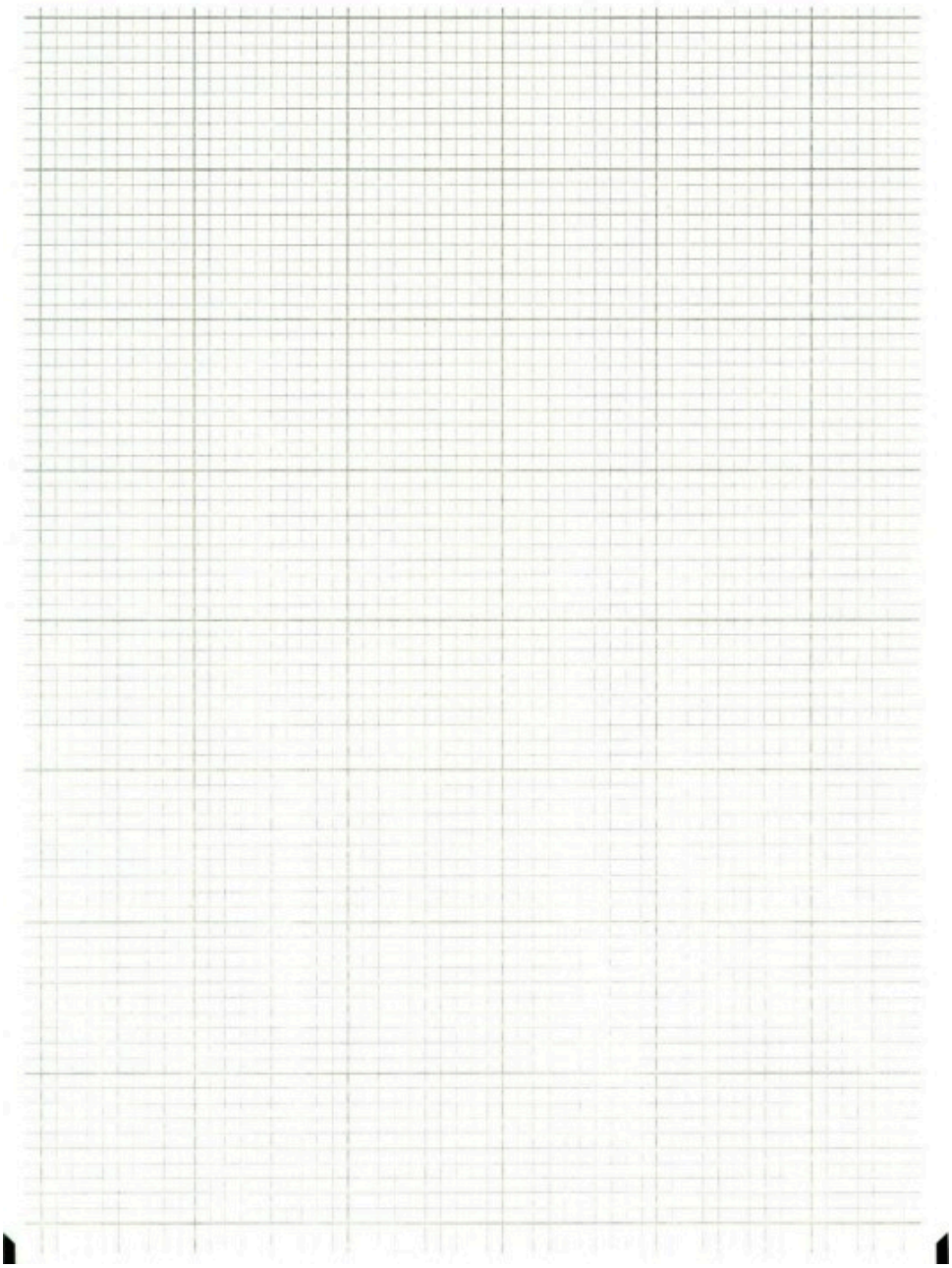
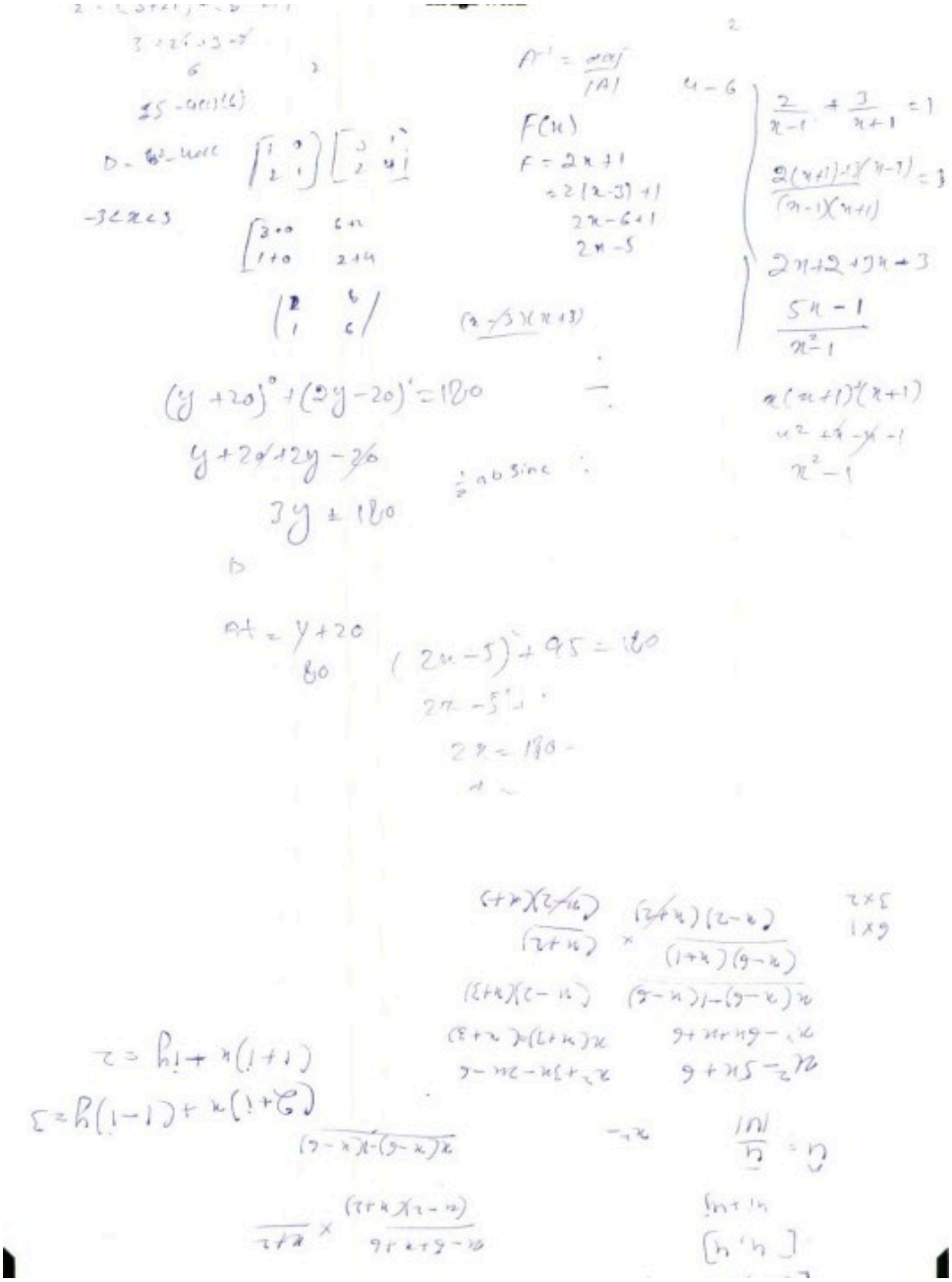
Question No: 2

(iii). Solved graph:-

x	-2	-1	0	1	2	
y	-5	-3	-1	1	3	







Q. No. 2 Part (I)

$(3+4i) \div (5-2i)$

حل:-

$$\frac{3+4i}{5-2i} \times \frac{5+2i}{5+2i}$$

$$\frac{15+20i+6i+8i^2}{(5)^2-(2i)^2}$$

$$\frac{15+26i+8(-1)}{25-4i^2}$$

$$\frac{15+26i-8}{25-4(-1)}$$

$$\frac{7+26i}{29}$$

$$\frac{7}{29}+\frac{26}{29}i$$

Q. No. 2 Part (ii)

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

Sol:-

$$A^{-1} = \frac{adjA}{|A|}$$

$$adjA = \begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}$$

$$|A| = \begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix} = 4 - 6$$

$$|A| = -2$$

$$A^{-1} = \frac{adjA}{|A|} = \frac{\begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}}{-2}$$

$$A^{-1} = \begin{bmatrix} \frac{4}{-2} & \frac{-2}{-2} \\ \frac{-3}{-2} & \frac{1}{-2} \end{bmatrix}$$

$$A^{-1} = \begin{bmatrix} -2 & 1 \\ \frac{3}{2} & -\frac{1}{2} \end{bmatrix}$$ Ans

Q. No. 2 Part (iii)

$$y = 2x - 1$$

$\Rightarrow x = -2$

$y = 2(-2) - 1$

$\boxed{y = -5}$

$\Rightarrow x = -1$

$y = 2(-1) - 1$

$\boxed{y = -3}$

$\Rightarrow x = 0$

$y = 2(0) - 1$

$\boxed{y = -1}$

$\Rightarrow x = 1$

$y = 2(1) - 1$

$\boxed{y = 1}$

$\Rightarrow x = 2$

$y = 2(2) - 1$

$\boxed{y = 3}$

x	-2	-1	0	1	2
y	-5	-3	-1	1	3

Q. No. 2 Part (iv)

$$\left|\frac{2x-4}{6}\right| = \frac{4}{3}$$

Sol:-

$$\frac{2x-4}{6} = \pm\frac{4}{3}$$

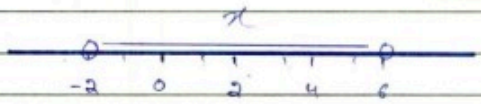
$$\frac{2x-4}{6} = -\frac{4}{3} \qquad , \qquad \frac{2x-4}{6} = \frac{4}{3}$$

$$2x-4 = -8 \qquad 2x-4 = 8$$

$$2x = -4 \qquad 2x = 12$$

$$x = -2 \qquad x = 6$$

$\Rightarrow$ Number Line :



Q. No. 2 Part (v)

$P(-1,4)$, $\vec{v} = [3,-2]$

Sol:-

(a) to point Q

Point $Q = [(-1+3),(4-2)]$

$Q = (2,2)$

(b) $R(5,7)$ $\vec{v} = [3,-2]$

Translated point is S

$S = ((5+3),(7-2))$

$S = (8,5)$

Yes S(8,5) is Correct.

Q. No. 2 Part (vi)

A(1, 2) B(5, 6)

Sol

A Sol:-

$\overrightarrow{AB} = [(5-1), (6-2)]$

$= [4, 4]$

$\vec{AB} = 4\hat{i} + 4\hat{j}$

$\hat{u} = \frac{\bar{u}}{|u|}$

$\bar{AB} = 4\hat{i} + 4\hat{j}$

$|\bar{AB}| = \sqrt{(4)^2 + (4)^2}$

$= 4\sqrt{2}$

$\hat{AB} = \frac{4\hat{i} + 4\hat{j}}{4\sqrt{2}}$

$= \frac{4}{4\sqrt{2}}\hat{i} + \frac{4}{4\sqrt{2}}\hat{j}$

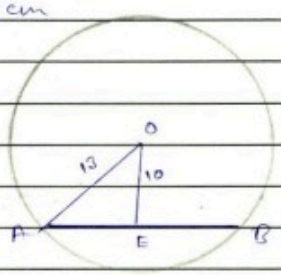
$\hat{AB} = \frac{1}{\sqrt{2}}\hat{i} + \frac{1}{\sqrt{2}}\hat{j}$

Q. No. 2 Part (vii)

radius = 13 cm

Distance b/w AB and Center = 10 cm

Chord lenght = AB = ?



Sol:-

In AOE

$H^2 = B^2 + P^2$

$(13)^2 = (B^2) + (10)^2$

$169 = B^2 + 100$

$\sqrt{B^2} = \sqrt{69}$

$B = 8.30$

Chord AB = 2B

$= 2(8.30)$

$= 16.6$

Chord lenght = 16.6 cm.

Q. No. 2 Part (viii)

$n(r) = 3$

$n(B) = 2$

$n(S) = 5$

Extra

$\Rightarrow$ according to Question

$\Rightarrow P(r) = \frac{2}{5}$

$\Rightarrow P(B) = \frac{1}{5}$

Sol:

$$\Rightarrow \frac{x^2 - 2x - 3x + 6}{x^2 - 2^2} \times \frac{x+2}{x^2 + 3x - 2x - 6}$$

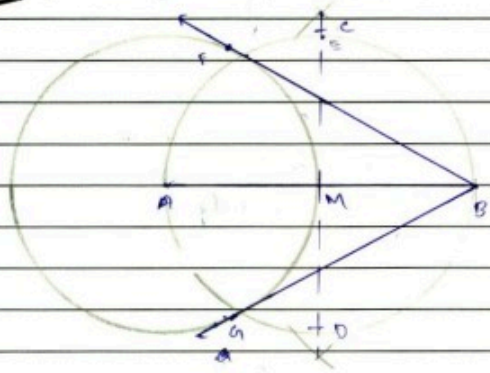
$$\frac{x(x-2) - 3(x-2)}{(x-2)(x-2)} \times \frac{(x+2)}{x(x+3) - 2(x+3)}$$

$$\frac{(x+3)(x-2)}{(x+2)(x-2)} \times \frac{(x+2)}{(x-2)(x+3)}$$

$$\frac{x+3}{(x-2)(x+3)}$$ Ans

Q. No. 2 Part (ix)

Solved.



Construction Steps:

⇒ draw line AB = 6cm.

⇒ draw a circle of radius 3cm at point A.

⇒ draw right bisector ~~the~~ of AB to finding its midpoint.

⇒ with center M draw another circle of radius AM.

⇒ Circle of radius AM touch with bisector at point E. ~~and~~

⇒ draw an arc of radius BE which cut circle of radius 3cm at points F and G.

⇒ joint F to B and G to B

⇒ Thus $\overline{FB}$ and $\overline{GB}$ are required tangent.

Q. No. 3 (Page 1)

Sol:-

width = x

Lenght = $x + 4$

$\Rightarrow$ according to Condition :-

Width = $2x$

lenght = $2x + 8$

$\Rightarrow$ according to Question :-

$128 = (2x+8)(2x)$

$128 = 4x^2 + 16x$

$0 = 4x^2 + 16x - 128$

$4x^2 + 16x - 128 = 0$

$4(x^2 + 4x - 32) = 0$

$x^2 + 4x - 32 = 0$

Q. No. 3 (Page 2)

$a = 1, \quad b = 4 \quad c = -32$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-4 \pm \sqrt{(4)^2 - 4(1)(-32)}}{2}$$

$$\frac{-4 \pm 12}{2}$$

$$x = \frac{-4+12}{2}, \quad x = \frac{-4-12}{2}$$

$$x = 4 \qquad x = -8$$

$x = 4$ Considered

width $= x = 4m$

lenght $= x + 4 = 4 + 4 = 8m$

Q. No. 4 (Page 1)

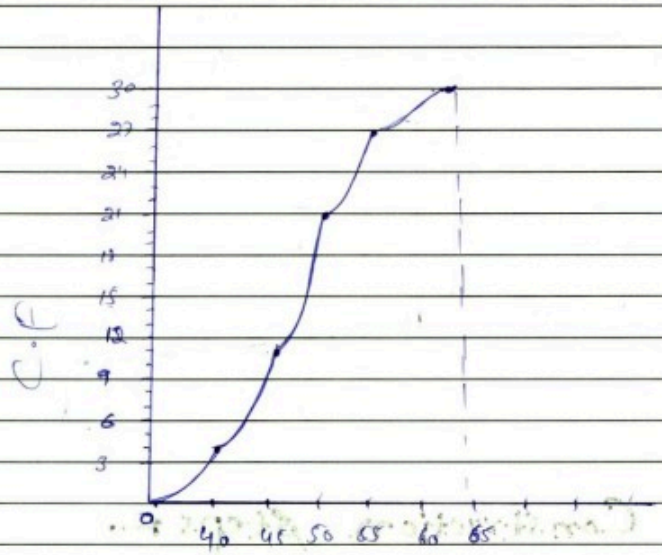
C.I	40-45	45-50	50-55	55-60	60-65	
f	4	7	10	6	3	

30/8

C.I	f	C.f	C.B
35 - 40	0	0	34.5 - 3
40 - 45	4	4	
45 - 50	7	11	
50 - 55	10	21	
55 - 60	6	27	
60 - 65	3	30	

Q. No. 4 (Page 2)

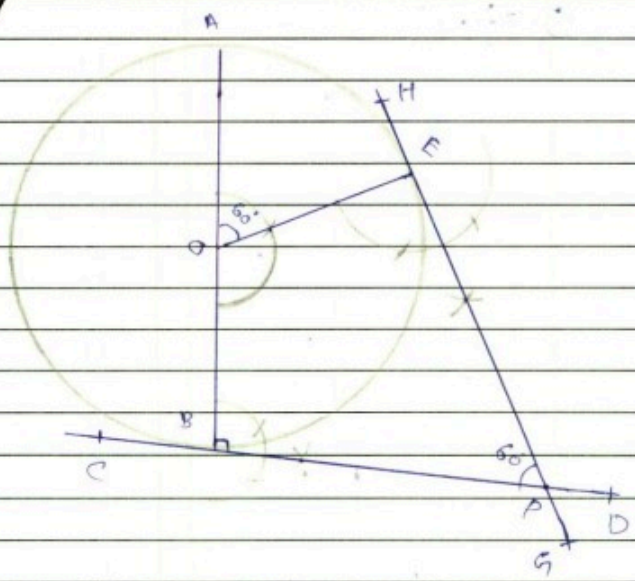
ogive



C.I / C.B

Q. No. 5 (Page 1)

Sol:-



Construction steps:-

=> Draw a circle of radius 4cm
=> Draw a diameter AB of circle.
=> Draw an angle of 90° at point B
=> The $\overline{AB} \perp \overline{CD}$ making angle of 90° at point B.

Q. No. 5 (Page 2)

⇒ Measure angle of 60° ∠AOE at point 'O' which is Center of Circle

⇒ Draw an other angle of 90° at point E

⇒ Draw line from E to G.

⇒ $\overline{CD}$ and $\overline{GH}$ both intersect at point "P" making angle of 60°

⇒ $\angle BPE = 60°$