UNIT-I

① Polygons - Regular Methods

② Conic Sections - curves - General Method

I, Ellipse

II, Parabola

III, Hyperbola

General Method

4, Arc's of circle method

5, Oblong Method (or) rectangular Method

6, Parallelogram Method

7, Concentric circle method

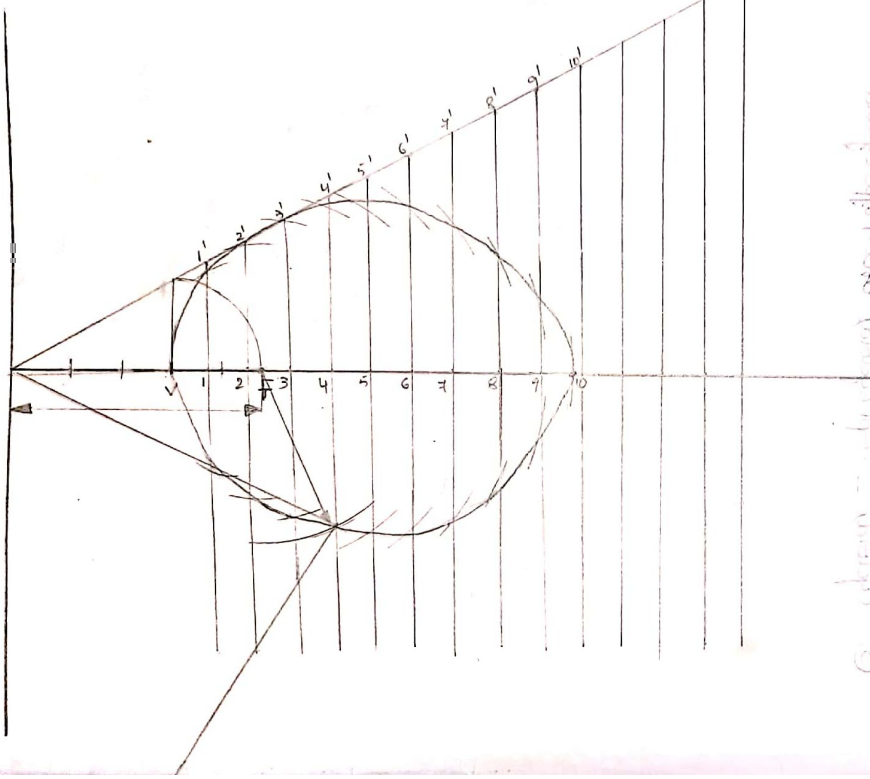
③ Cycloids - Epi cycloids and Hypo cycloid

Q, Construct a elliptical curve by using of eccentricity is $\frac{2}{3}$. That distance between directrix and focus is 50mm. And also draw a tangent and Normal on the curve using 35mm radius.

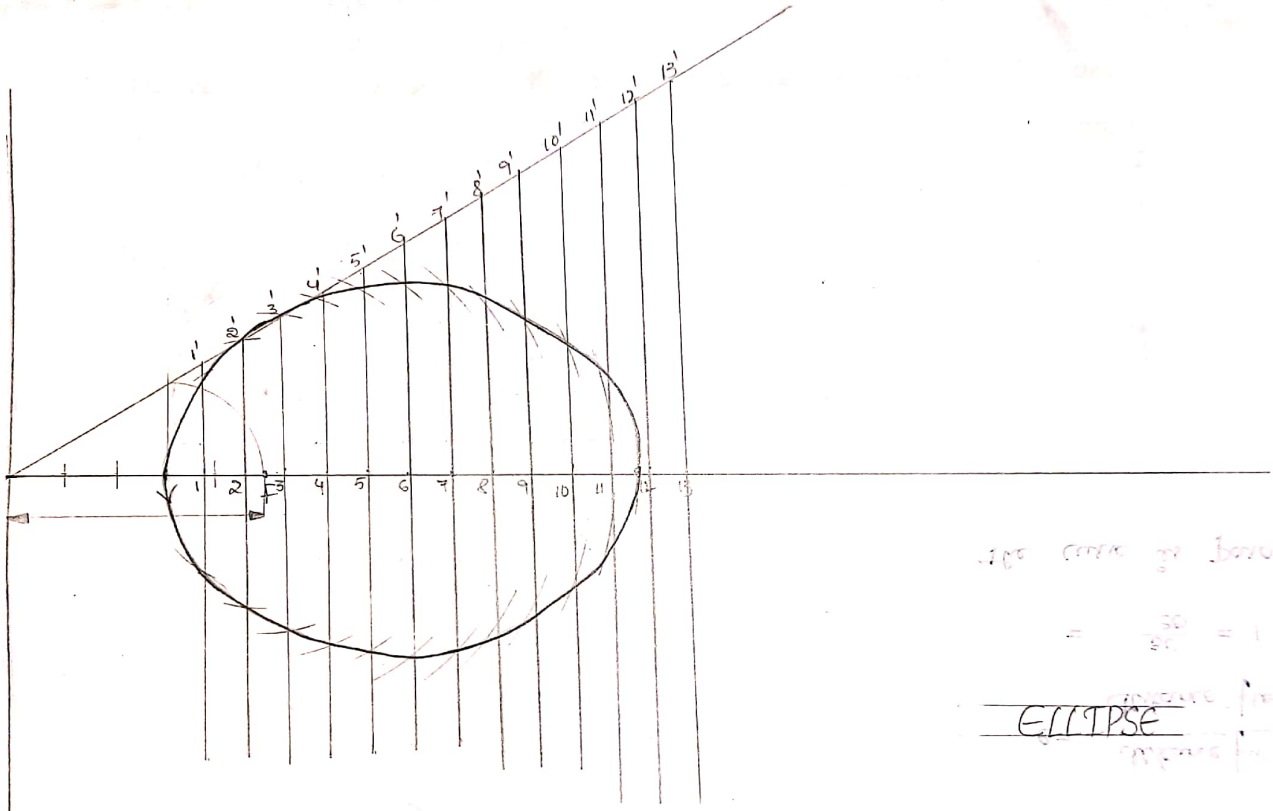
General Method:

$$e = \frac{\text{distance from focus to Directrix}}{\text{distance from directrix to focus}}$$

$$= \frac{2}{3} = 0.6$$

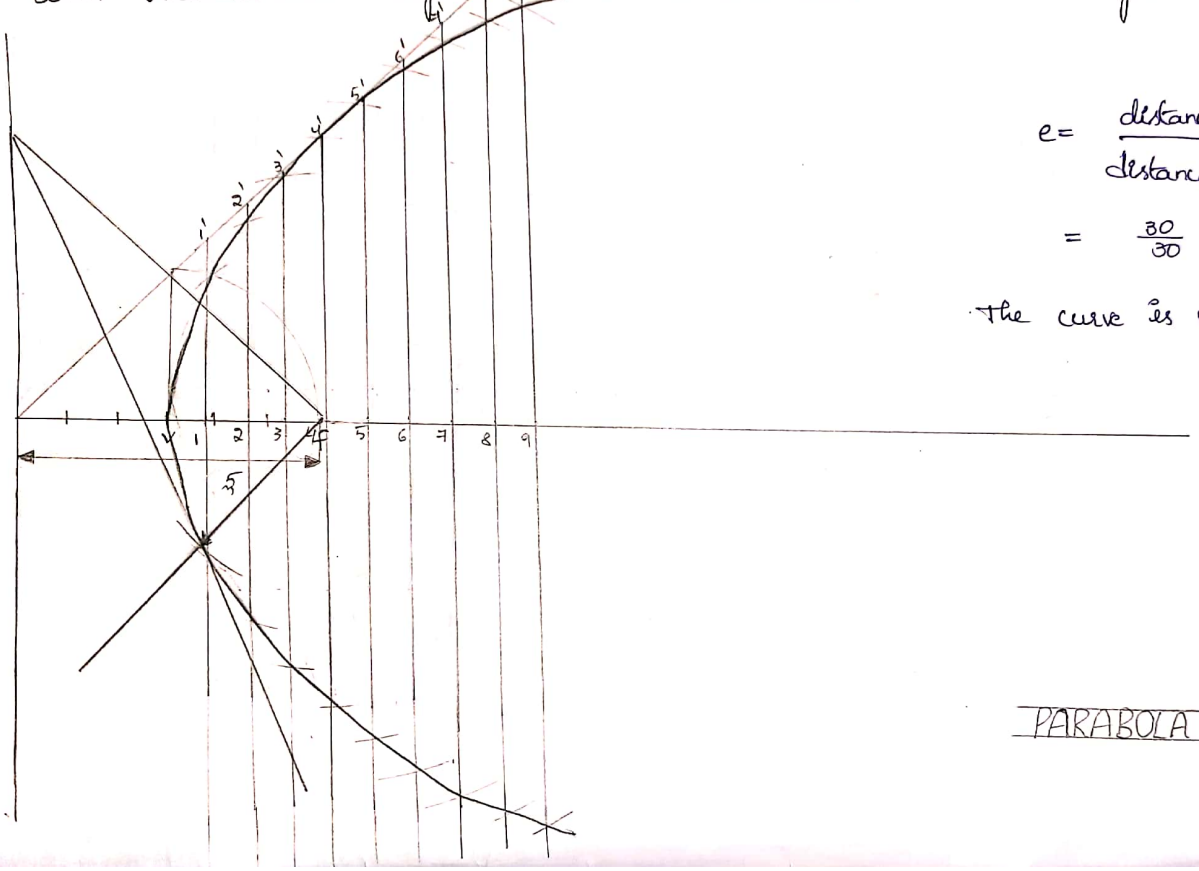


ELLIPSE



ELLIPSE

Q, Draw the curve the distance from between directrix to focus is 30mm and the distance between from focus to directrix is 30mm. And also draw a tangent & normal on the curve with 35mm radius and give curve name.



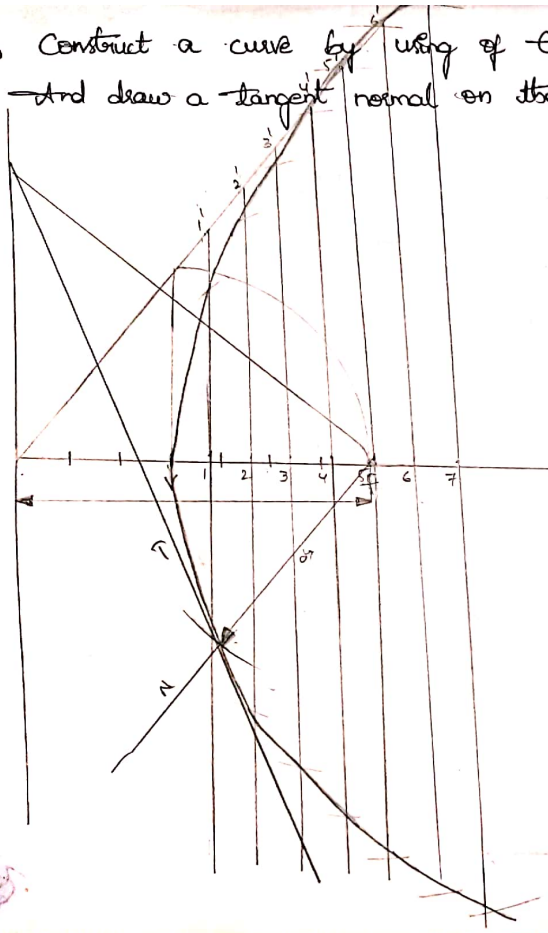
$e = \frac{\text{distance from focus to directrix}}{\text{distance from directrix to focus}}$

$= \frac{30}{30} = 1$

The curve is parabola

PARABOLA

Q, Construct a curve by using of Eccentricity is $\frac{4}{3}$ and the distance between directrix and focus is 70mm. And draw a tangent normal on the curve with the convenient radius and give a name for the curve.



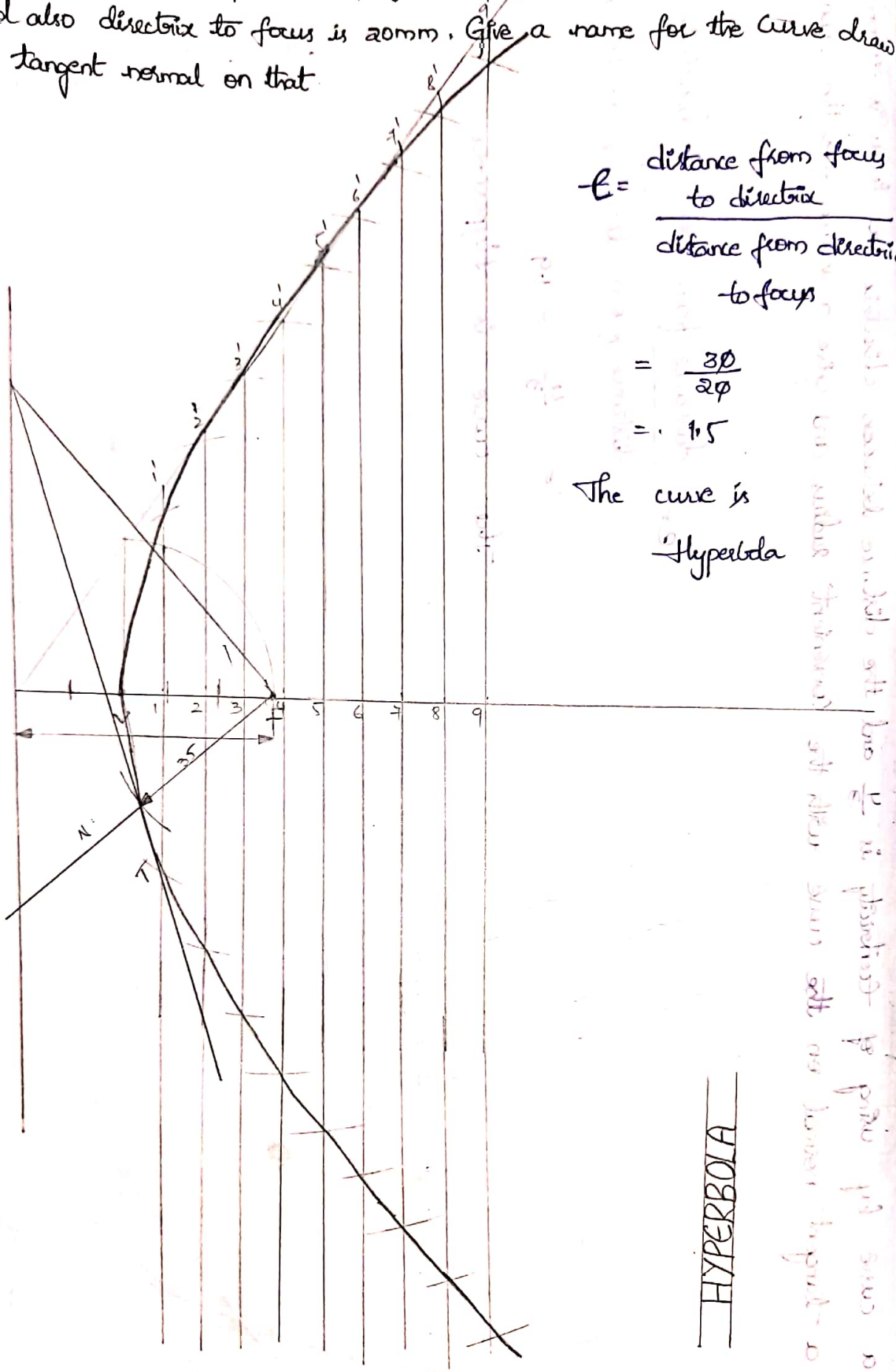
$e = \frac{\text{distance from focus to directrix}}{\text{distance from directrix to focus}}$

$= \frac{4}{3} = 1.9$

The curve is Hyperbola.

HYPERBOLA

Q, Draw the curve a point moves from the focus to directrix is 30mm and also directrix to focus is 20mm. Give a name for the curve draw a tangent normal on that



$e = \frac{\text{distance from focus to directrix}}{\text{distance from directrix to focus}}$

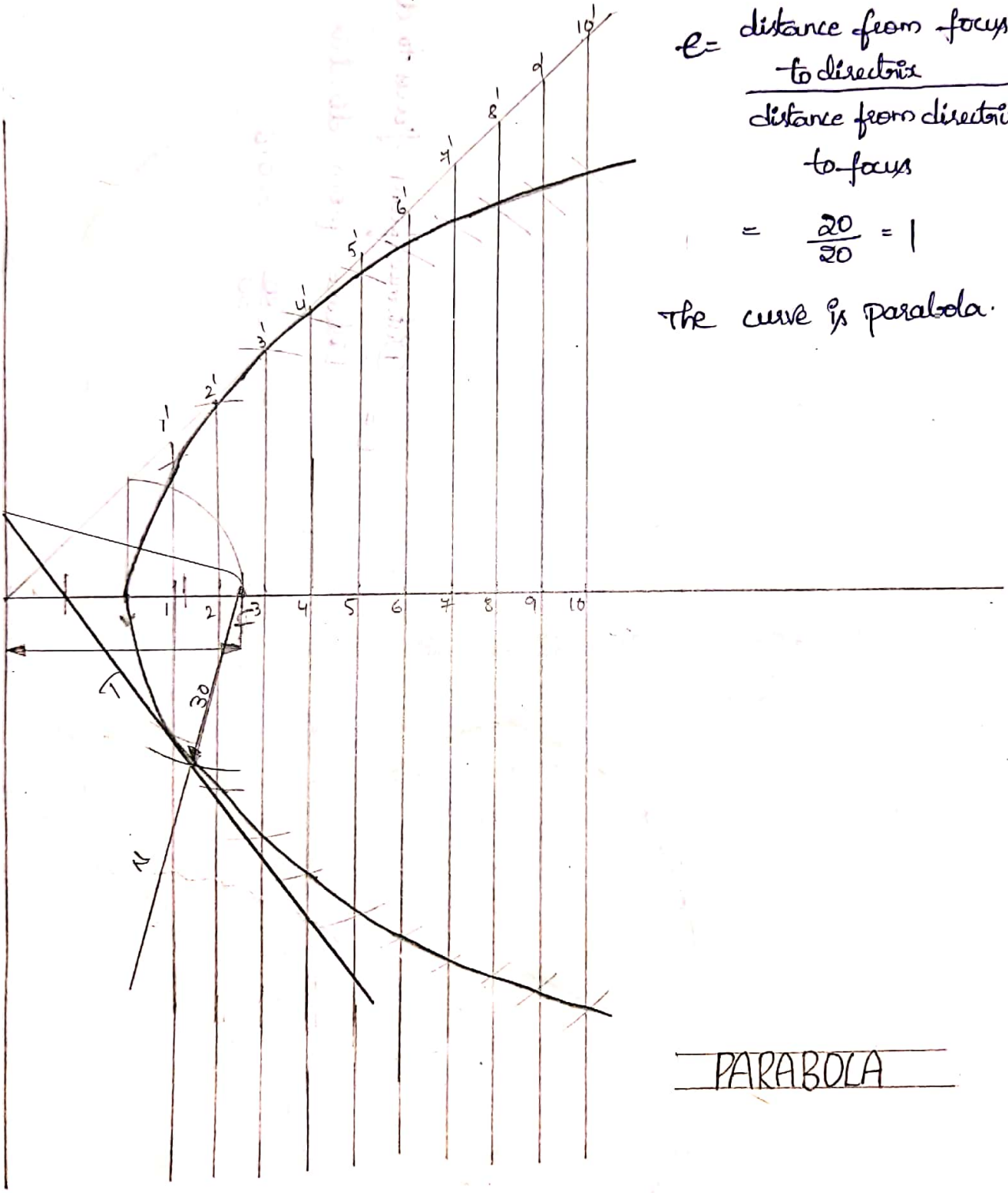
$= \frac{30}{20}$

$= 1.5$

The curve is Hyperbola

HYPERBOLA

Q, Construct a curve by using Eccentricity ratio of a point moves equal distance from directrix to vertex and vertex to focus or focus to vertex. The distance between fixed straight line and fixed point is 40mm. Give a name for the curve and also draw a tangent normal on the curve with convenient radius.



$e = \frac{\text{distance from focus to directrix}}{\text{distance from directrix to focus}}$

$= \frac{20}{20} = 1$

The curve is parabola.

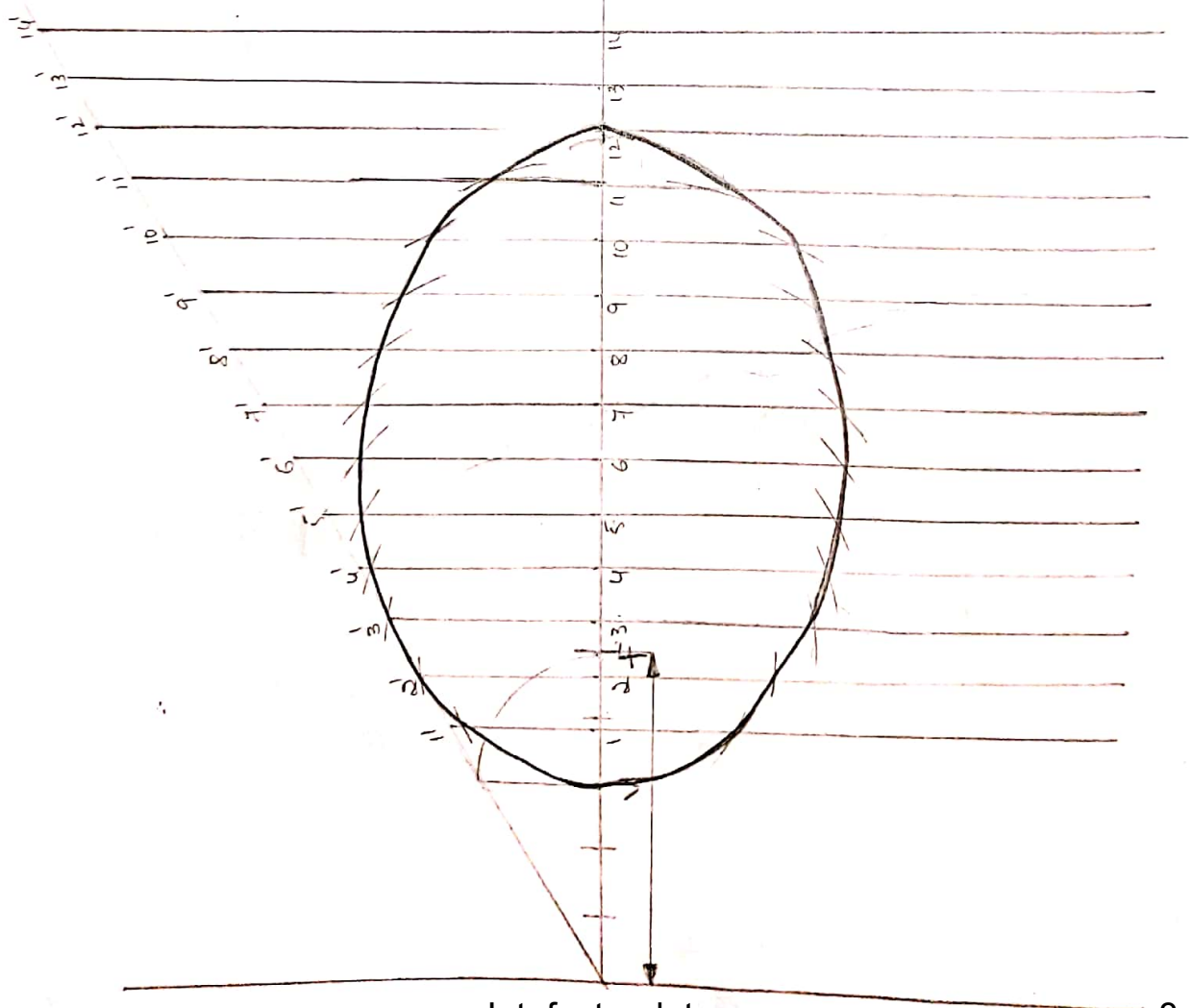
PARABOLA

Q) A point moves 30mm from the directrix to focus and also moves 20mm from focus to directrix and generate the curve and also give a name for the curve.

$$e = \frac{\text{Distance from focus to directrix}}{\text{Distance from directrix to focus}}$$

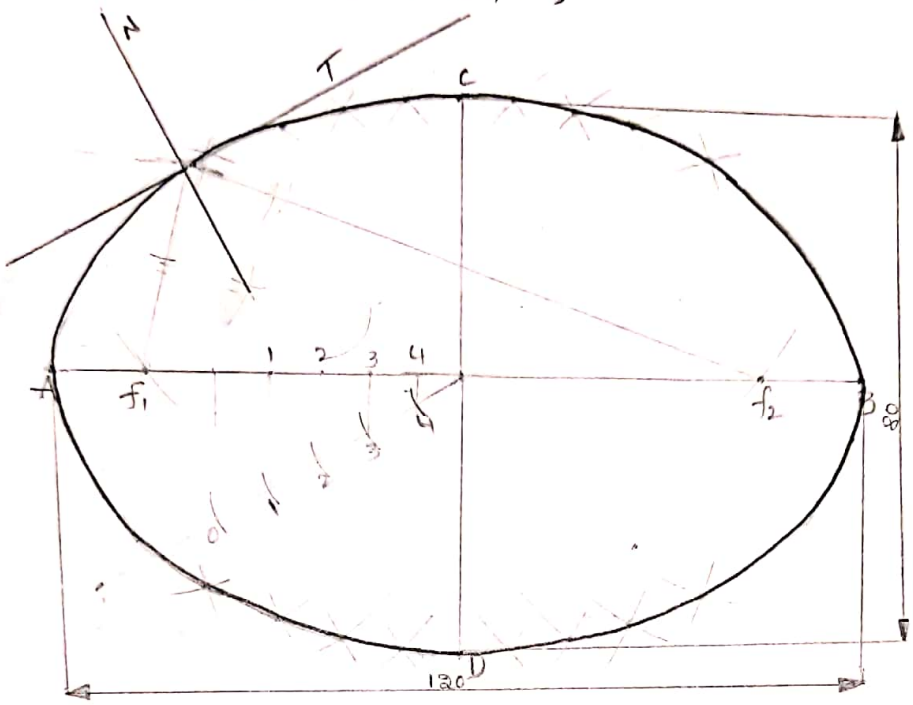
$$= \frac{20}{30} = 0.6$$

ELLIPSE

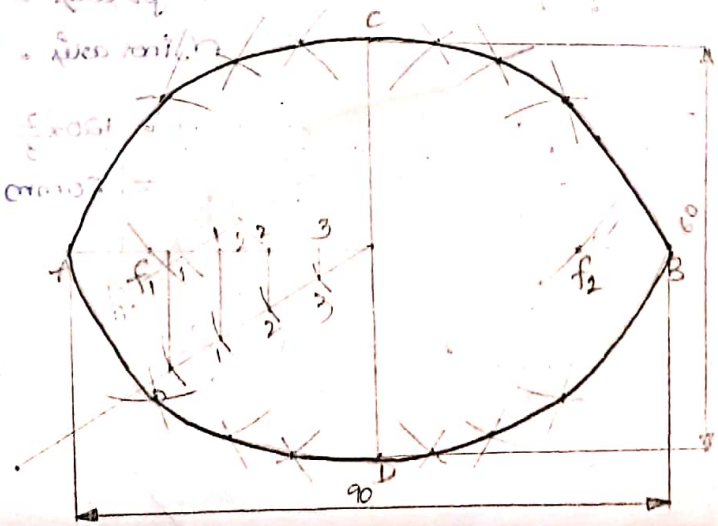


Arc's of circle Method :

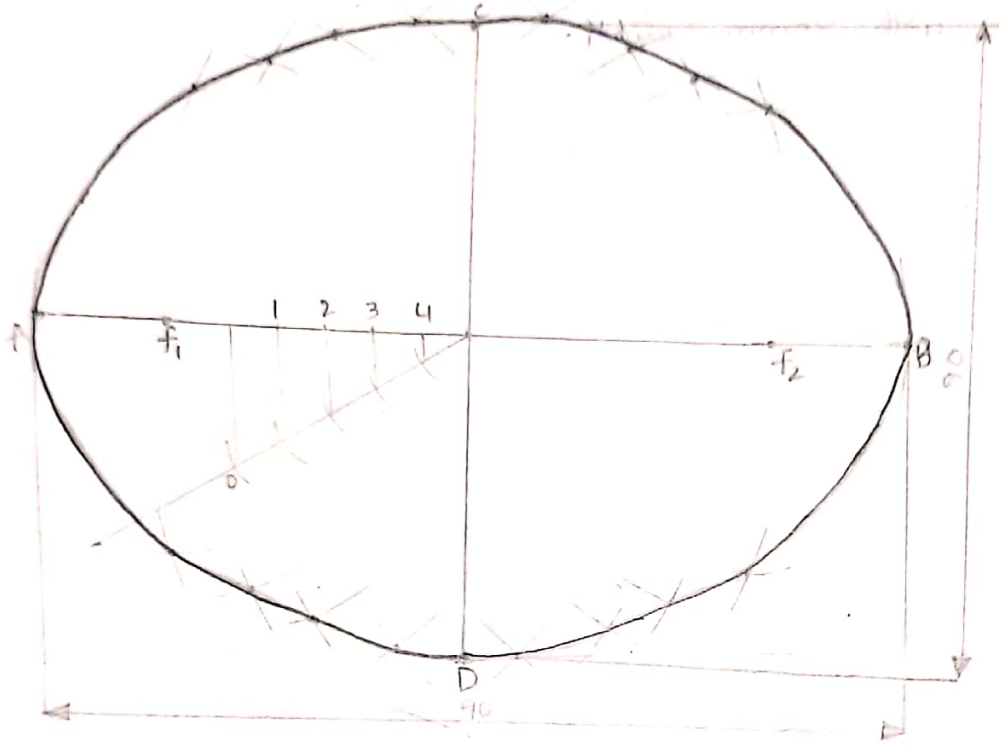
Q, The major axis of an ellipse is 120mm and the minor axis of an ellipse is 80mm. Draw the elliptical curve by using of Arc's of circle Method and also draw a tangent normal on the curve with 30mm radius.



Q, Construct an ellipse the major axis is 90mm and the minor axis 60mm. Draw the curve passing through the points.



Q, The distance between two foci (fixed points) is 90mm apart and the minor axis of an ellipse is 90mm find out the major axis of ellipse.



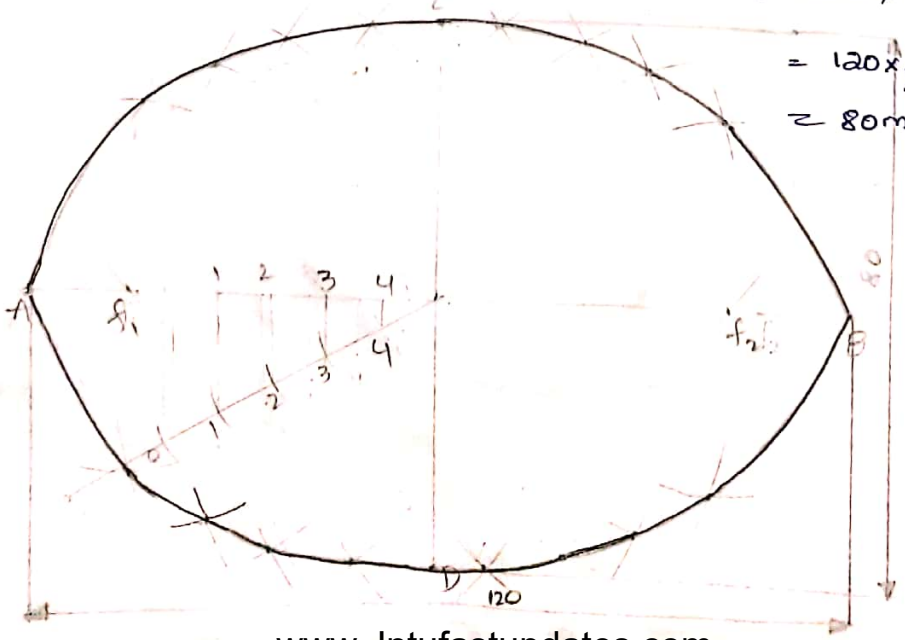
Q, The major axis of an ellipse is 120mm and the minor axis is $\frac{2}{3}$ ratio of in the major axis find out the minor axis distance. Draw the elliptical curve by using arcs of circle method.

Major axis = 120mm

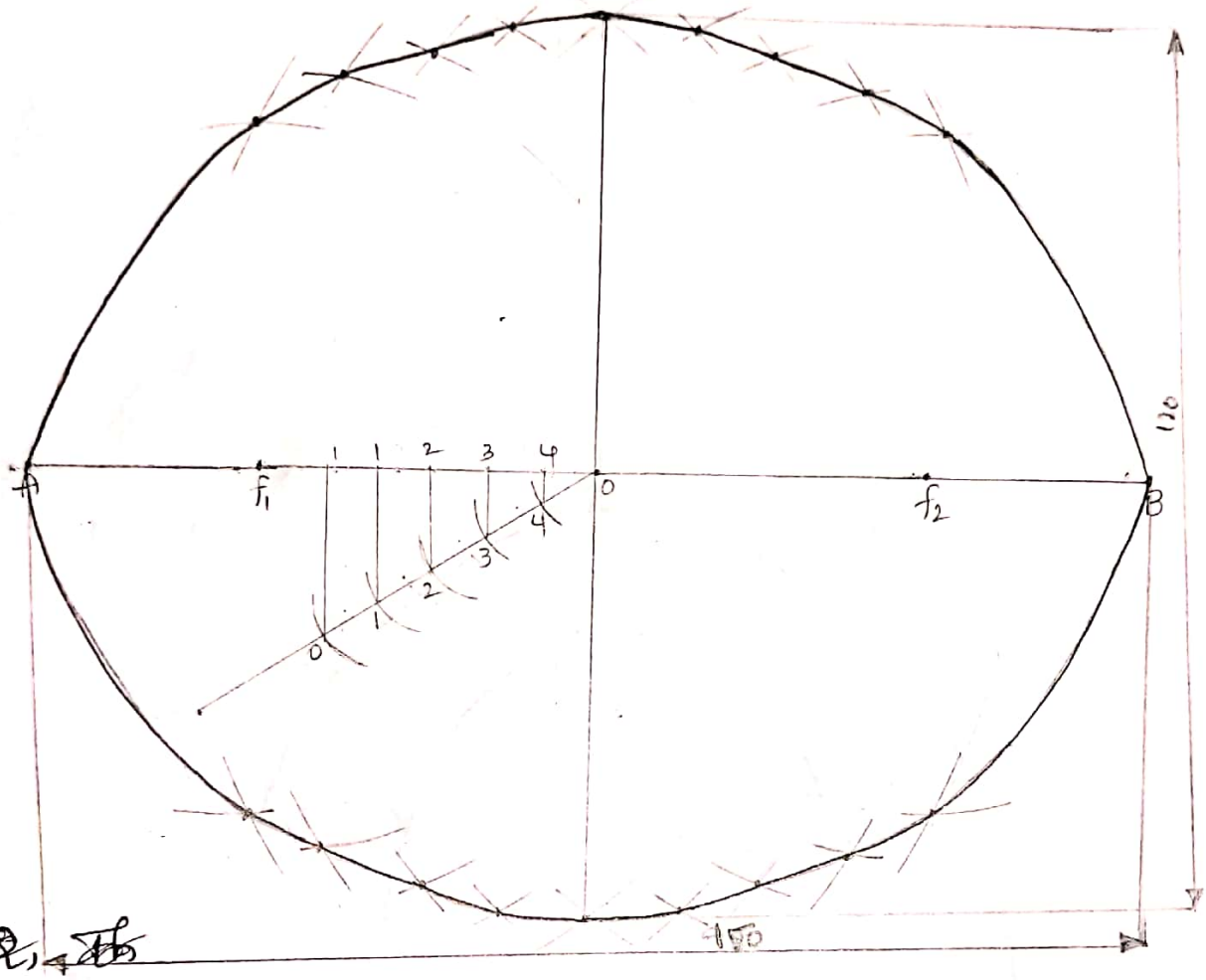
Minor axis = $\frac{2}{3}$ of major axis

$= 120 \times \frac{2}{3}$

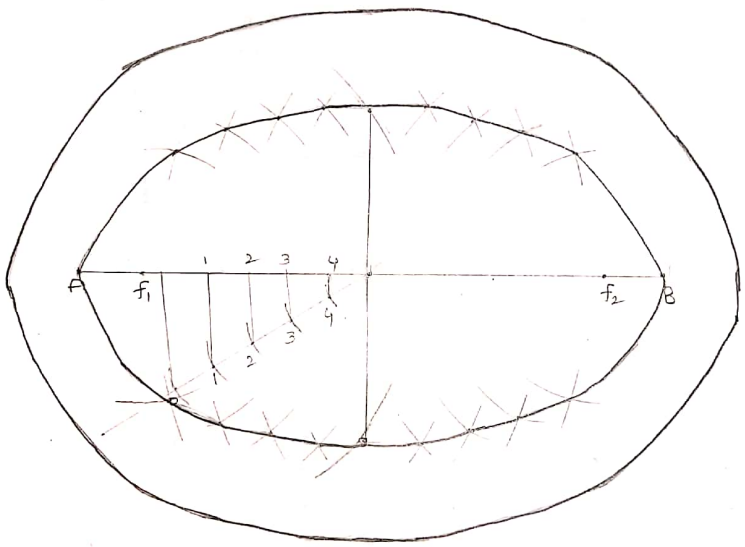
$= 80$mm



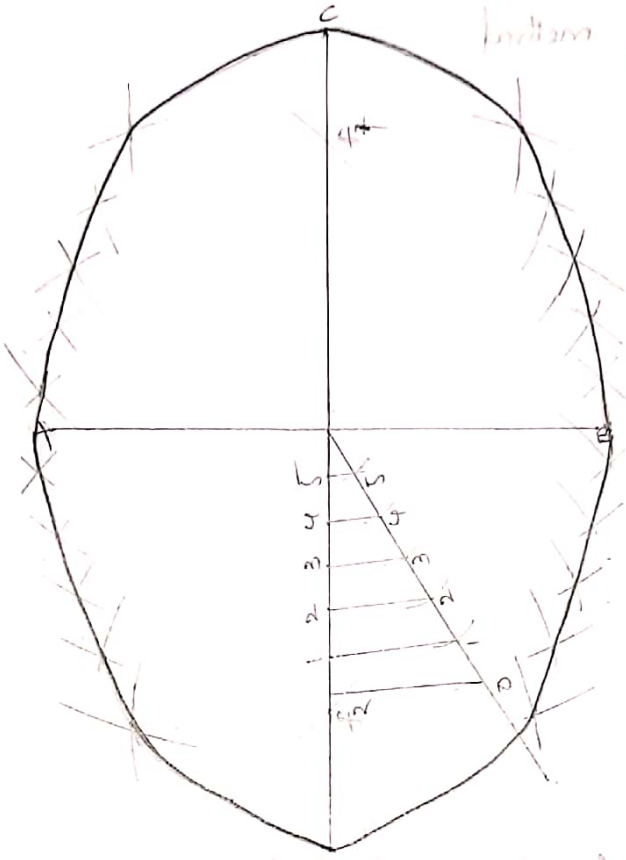
Q, The distance between two focii is 90mm apart and a point P is moves equal distance from the two focus is 70mm find out minor axis of an ellipse

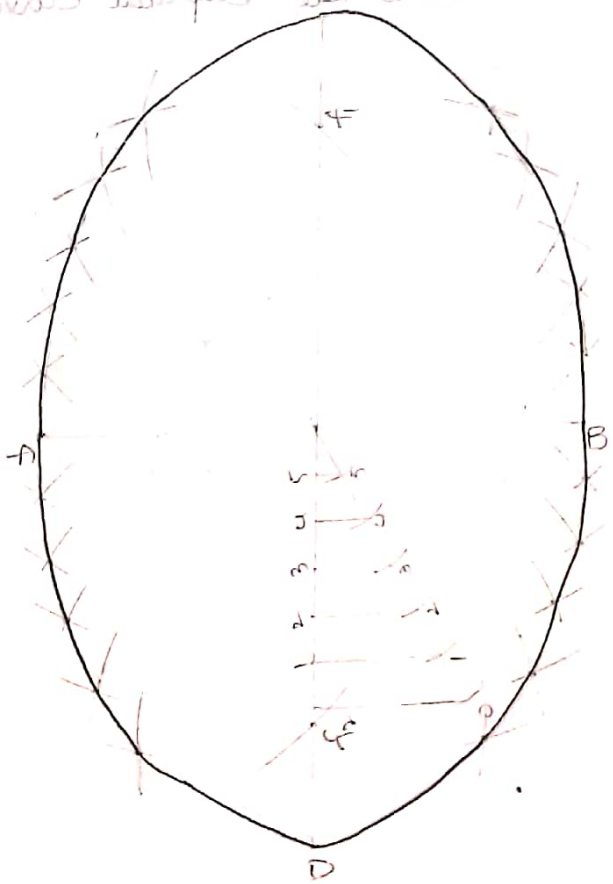


Q. The major axis of an ellipse is 120mm and a point is equally moved from two ends of major axis is equal to 25mm. find out the foci's distance and also minor axis. And draw parallel curve on above ellipse with 20mm radius.



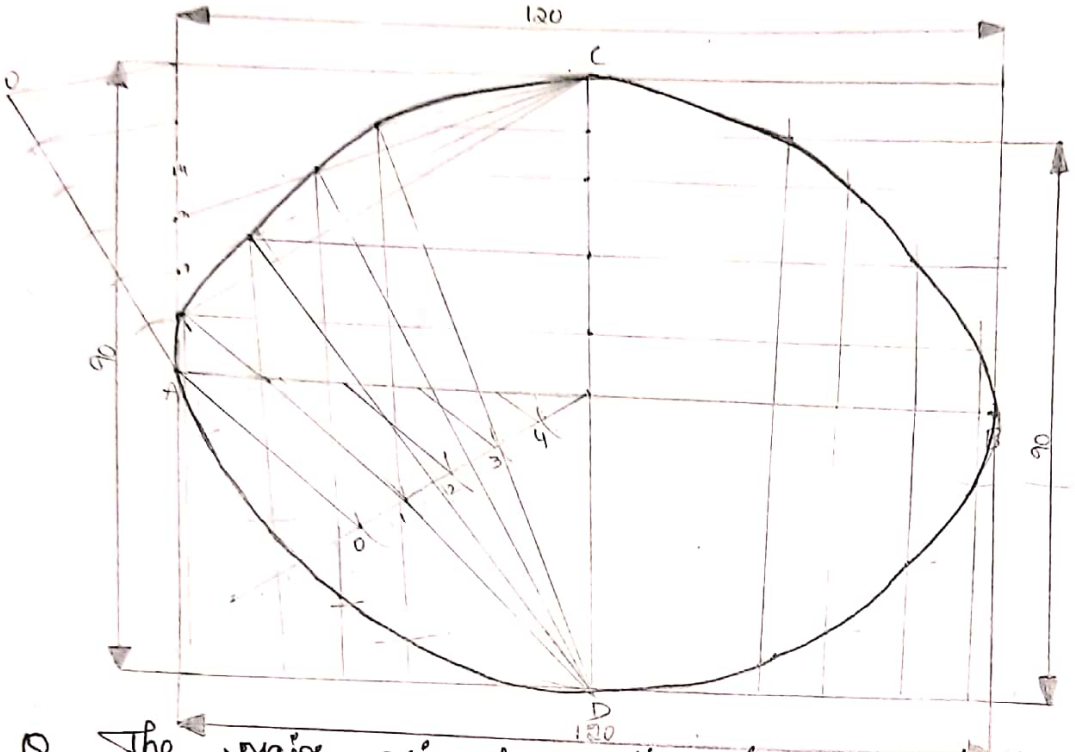
Q, The vertical major axis of an ellipse is 120mm and the horizontal minor axis 80mm. Draw the curve passing through the axes.



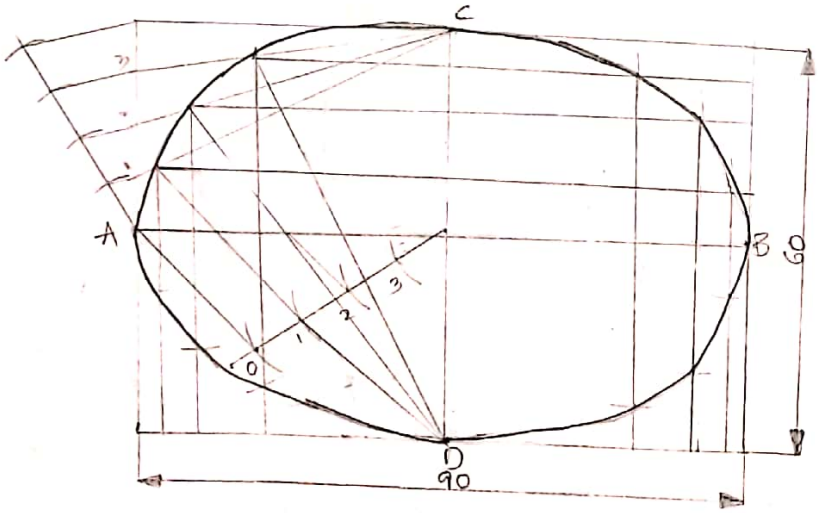


Oblong Method (or) Rectangular Method

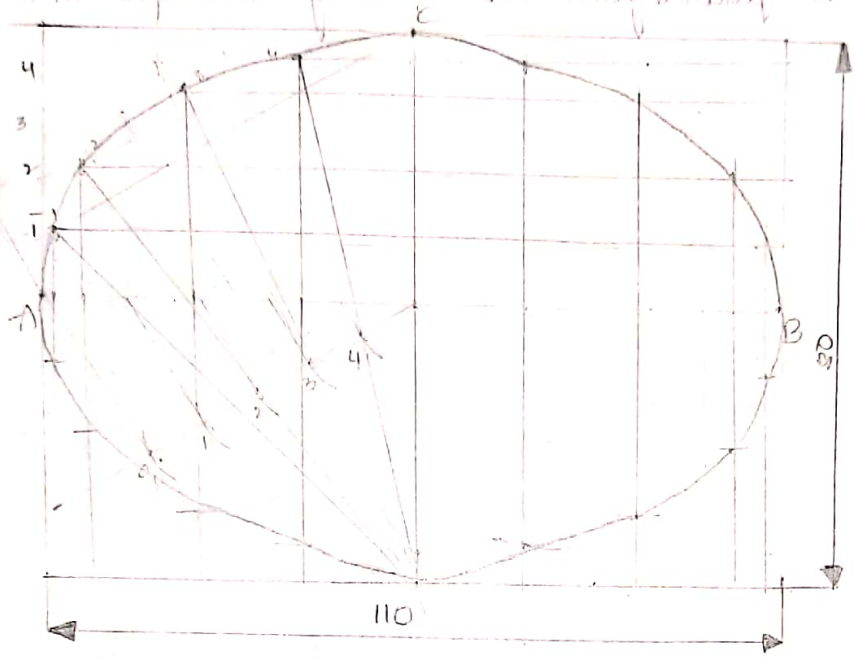
Q, The major axis of an ellipse is 120mm and the minor axis of an ellipse is 90mm draw the elliptical curve in the rectangular method or oblong method

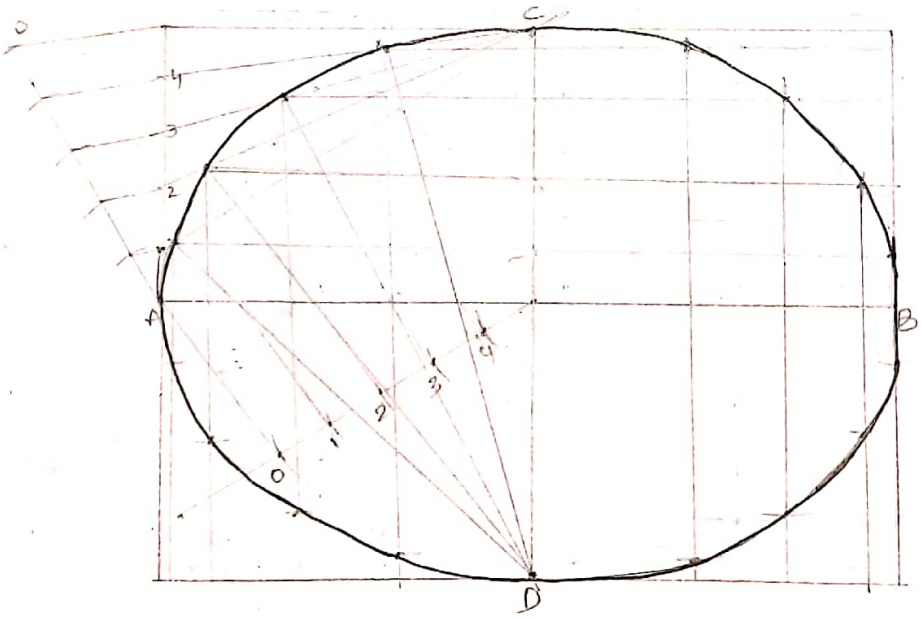


Q, The major axis of an ellipse is 90mm and the major axis of an ellipse is 60mm draw the elliptical curve in the oblong method.



Q) A rectangular plot having 110 X 80 mm make a elliptical ~~Gate~~ court.



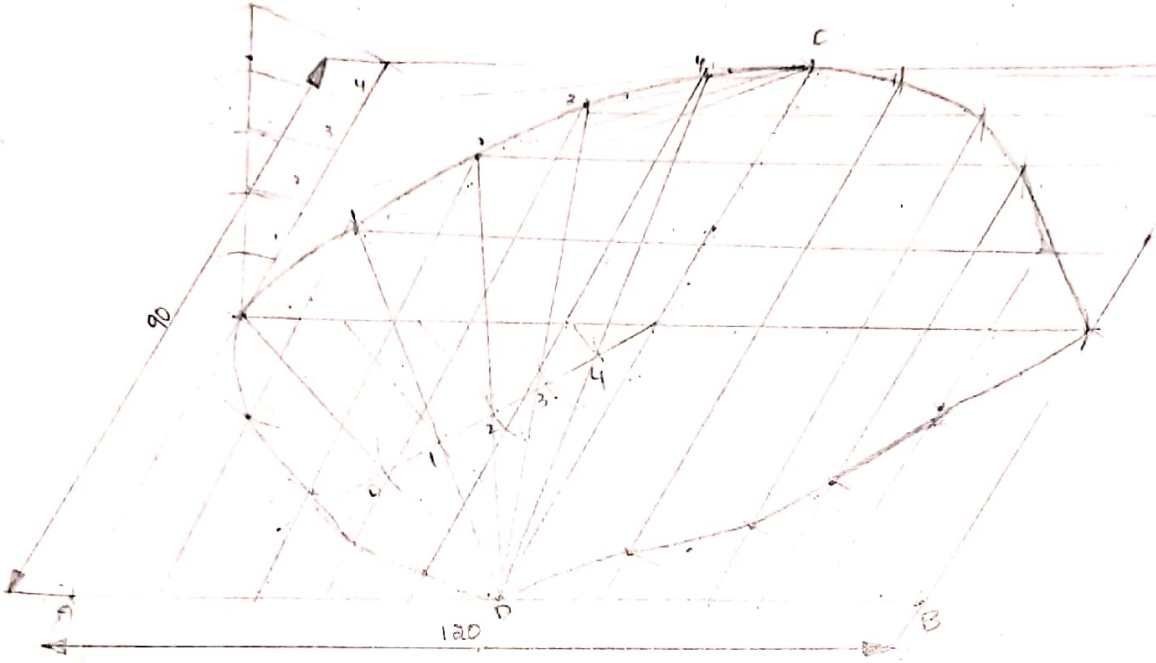


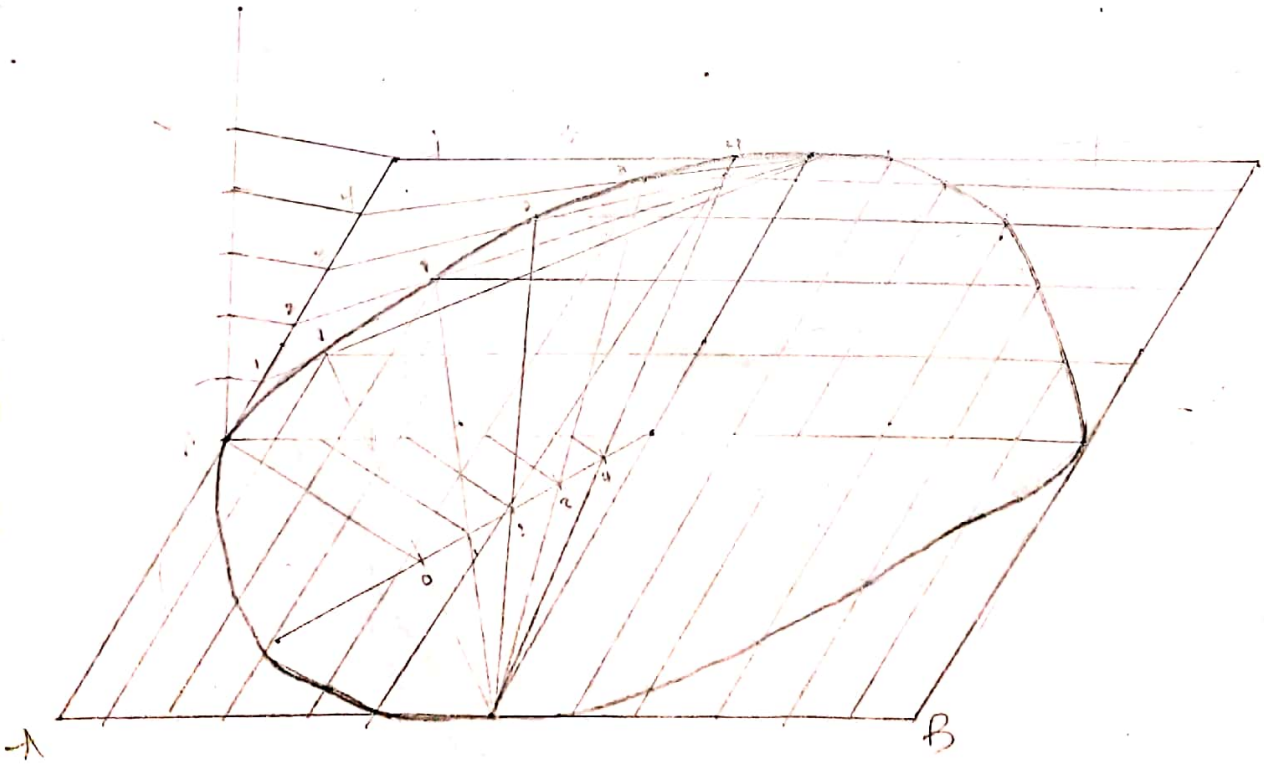
✱ Parallelogram Method

Q, Draw the ellipse in a parallelogram major axis is 120mm and the minor axis 90mm including 120° parallelogram angle

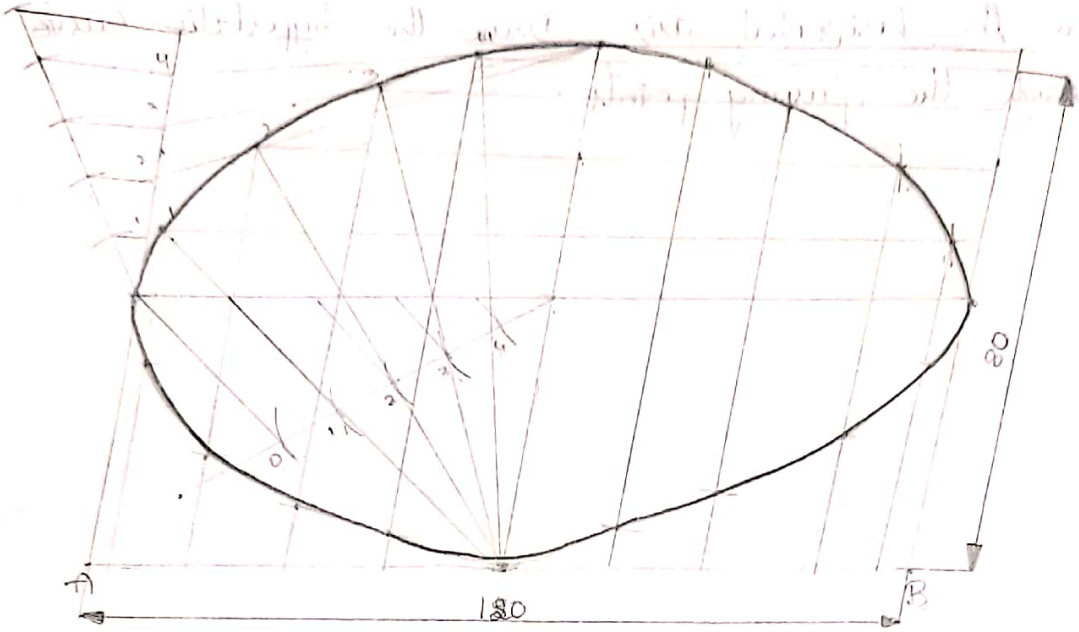
(or)

The major axis 120mm and the minor axis 90mm including 120° Construct a parallelogram and inscribing an ellipse in it.



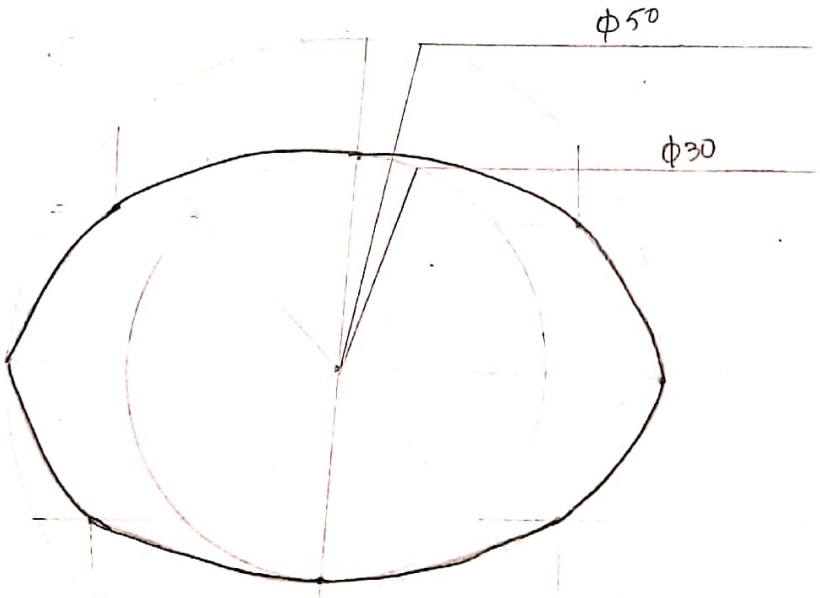


Q, The major axis 120mm and the minor axis 80mm including 80°. Construct a parallelogram and inscribing an ellipse in it.



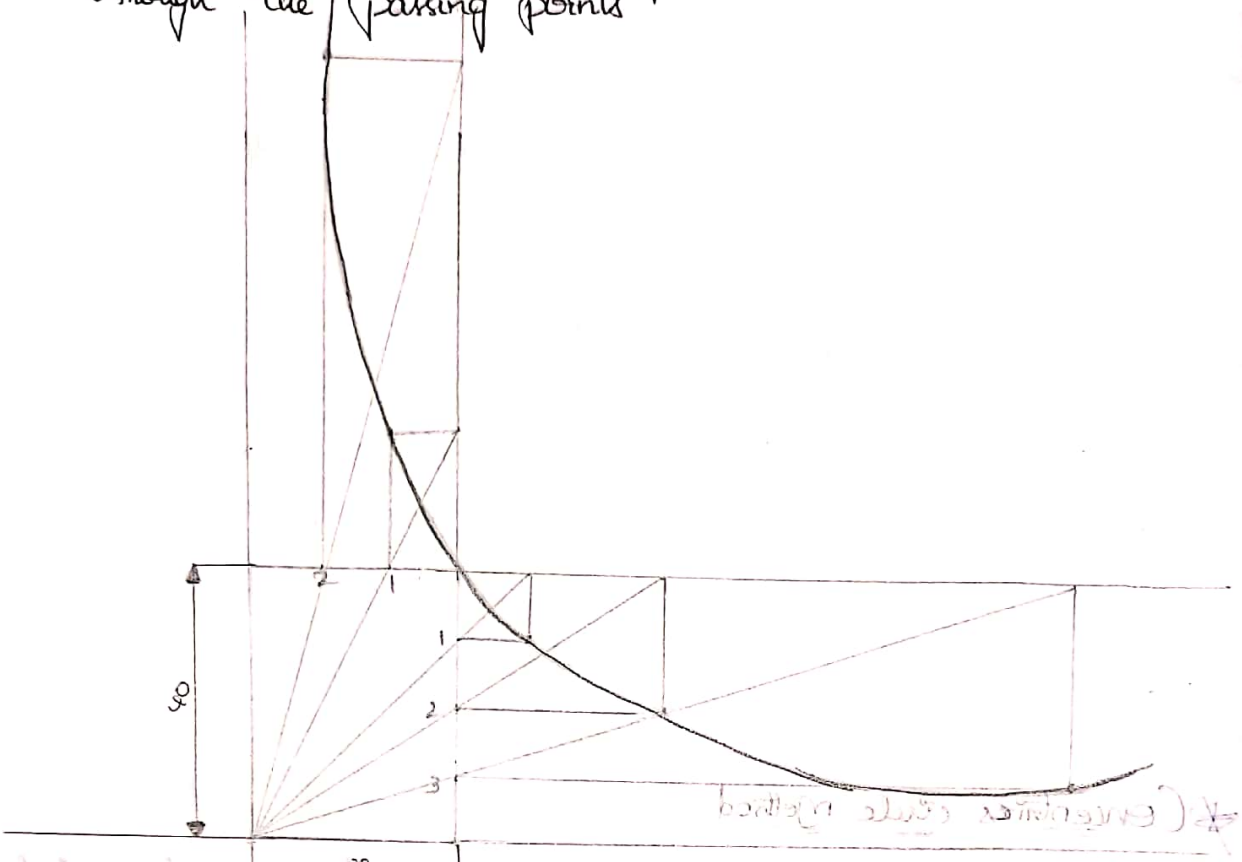
Concentric circle Method

Q, A circle having 100mm diameter and draw another circle in it with 70mm diameter. Draw an elliptical curve through the points by using of concentric circle Method.

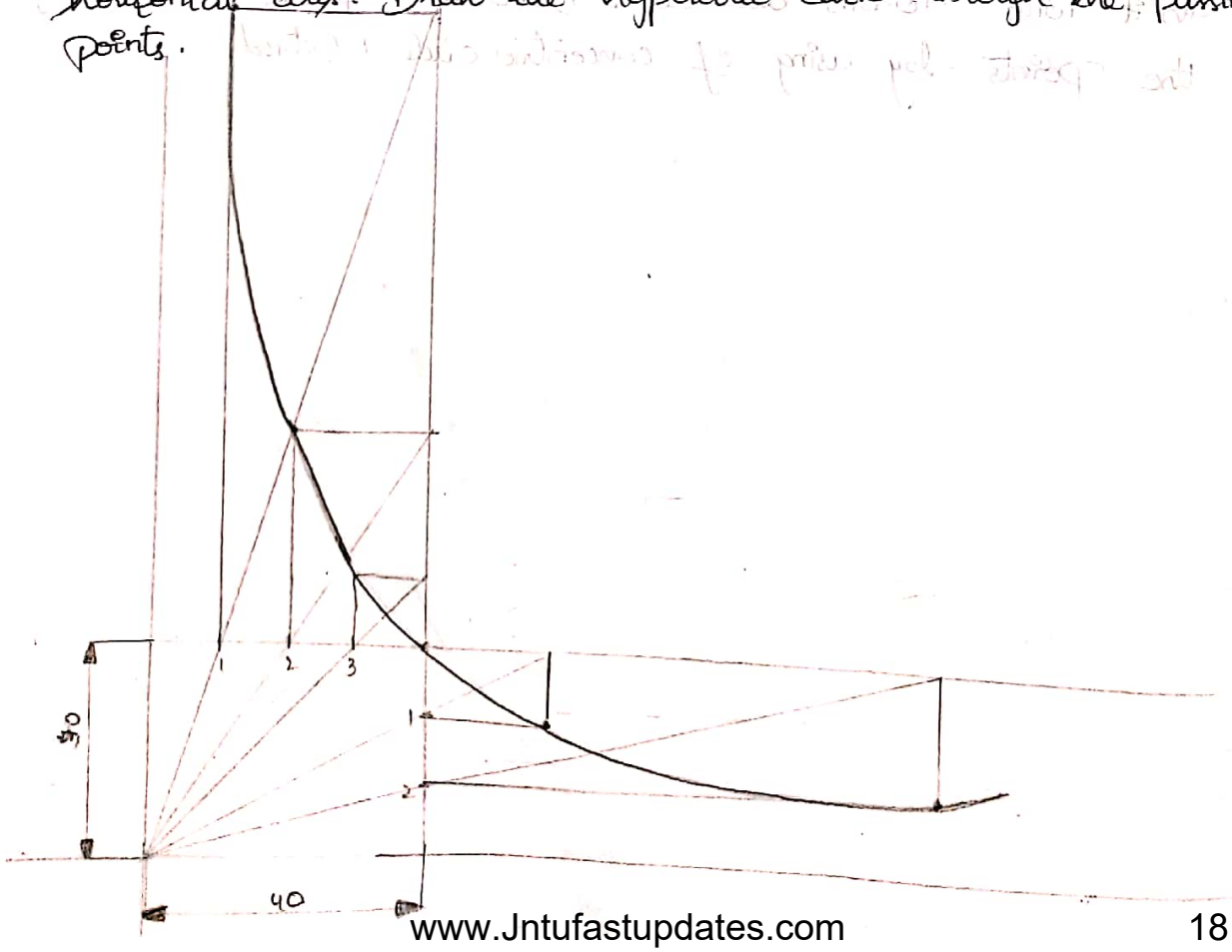


Hyperbola by Rectangular Method

1, A point 'P' is 30mm from the vertical axis and 40mm from the horizontal axis. Draw the hyperbolic curve through the passing points.

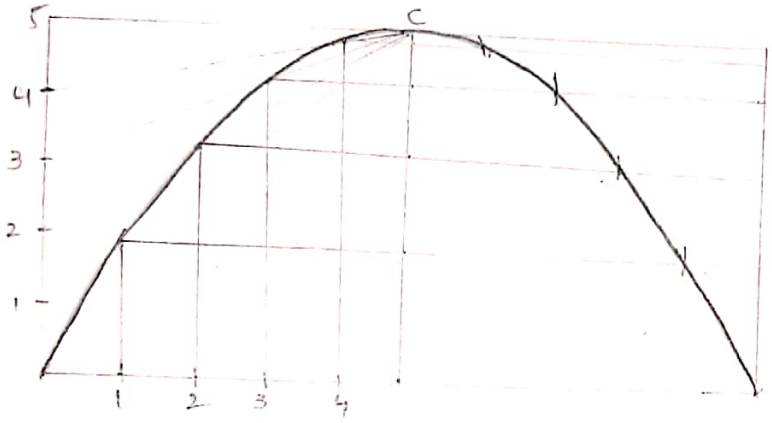


2, A point is 40mm from the vertical axis and 30mm from the horizontal axis. Draw the hyperbolic curve through the passing points.



* Parabola - Rectangle Method

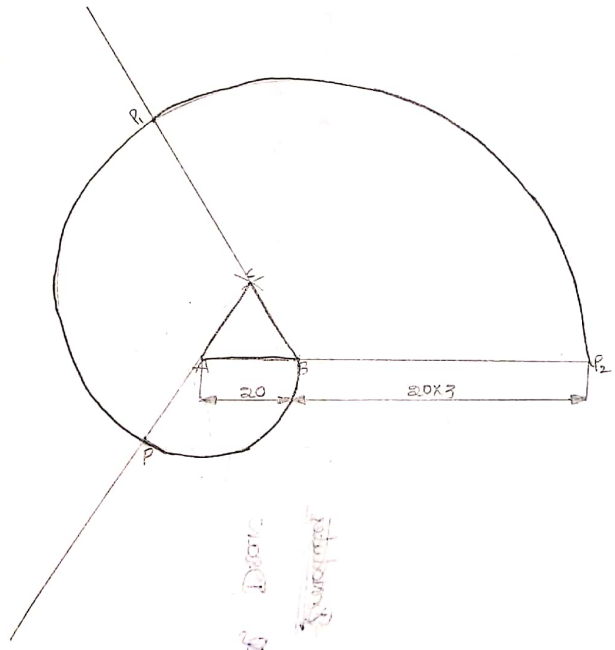
Q. A Cricketer throw a ball to the keeper the distance between Cricketer and keeper is 100mm and the ball travelling height is 50mm. Draw the projectile curve and give a name for that.



~~Parabolas~~

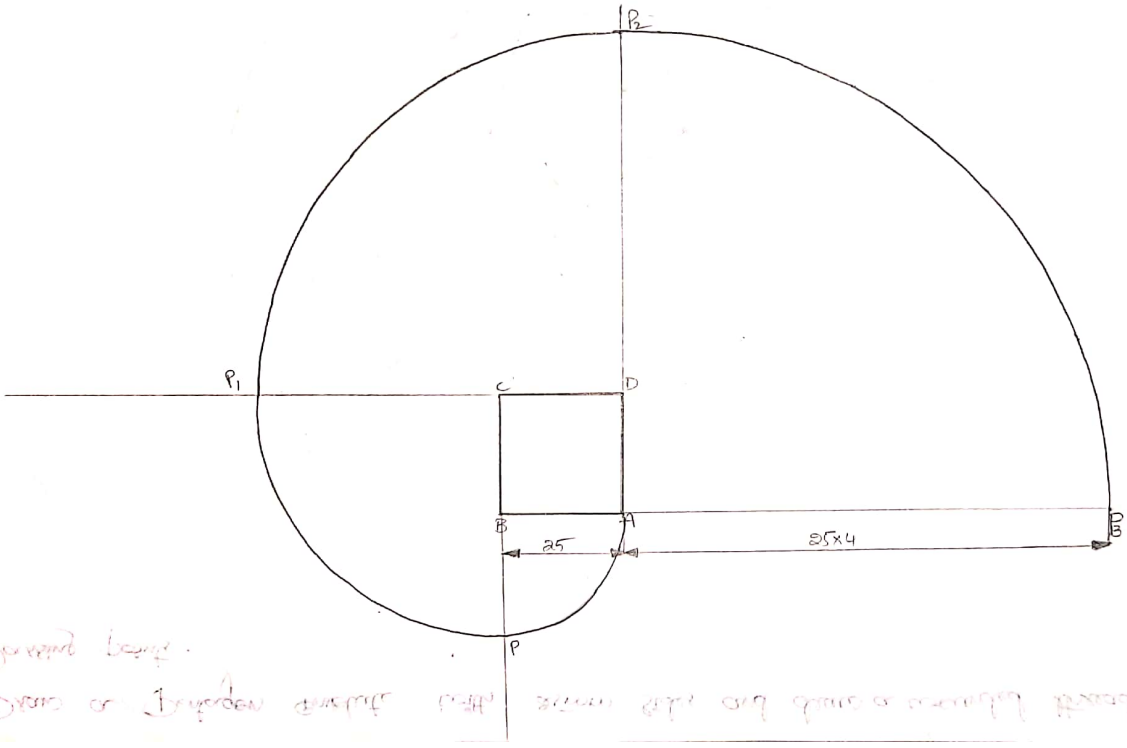
Q, Draw

Q, Draw a triangular involute with 20mm sides and draw a wounded threaded curve through the passing points.

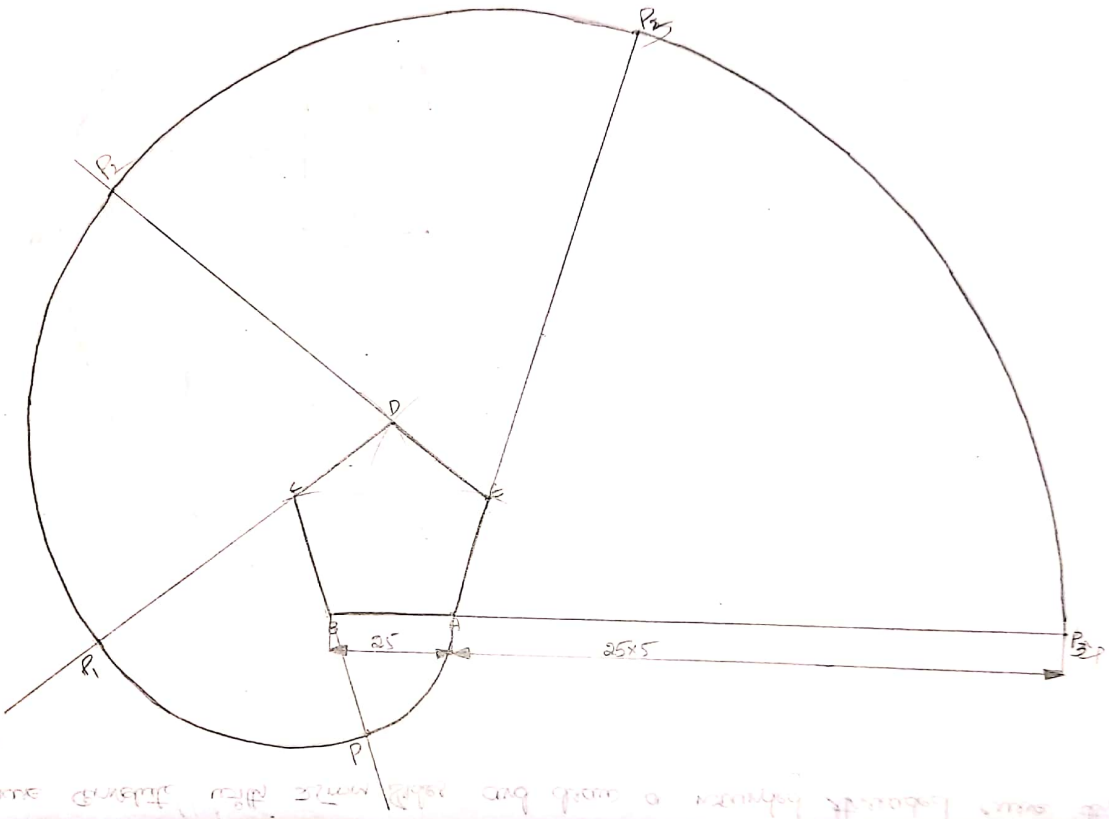


Involutes

Q, Draw a Square Involute with 25mm Sides and draw a wounded threaded curve through the passing points.

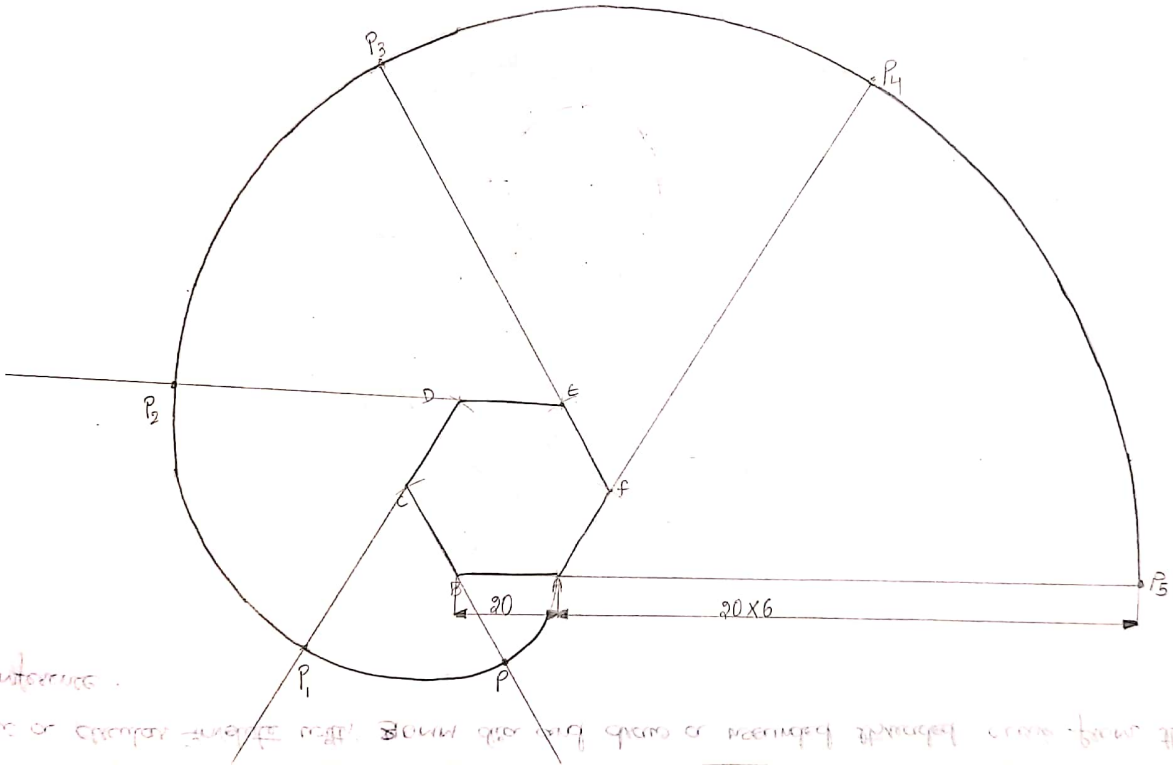


Q, Draw a Pentagon involute with 25mm sides and draw a wounded threaded curve through the Passing points.

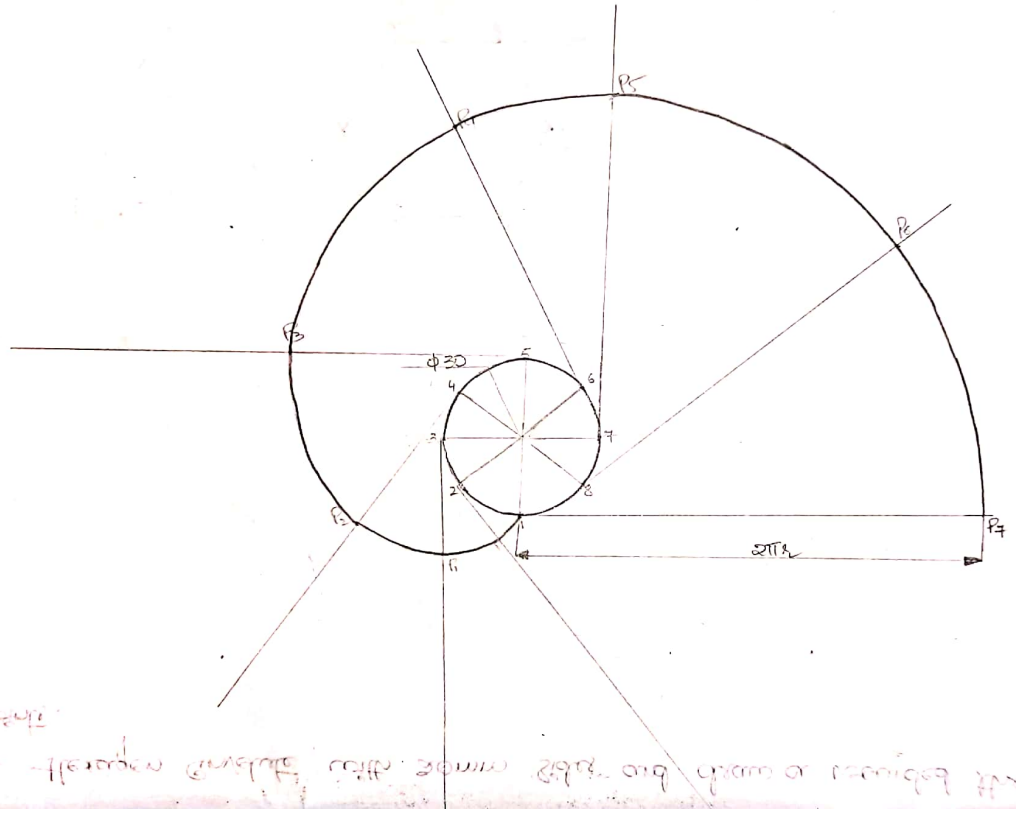


Q. Draw a Hexagon Involute with 20mm Sides and draw a wounded threaded curve through the Passing points.

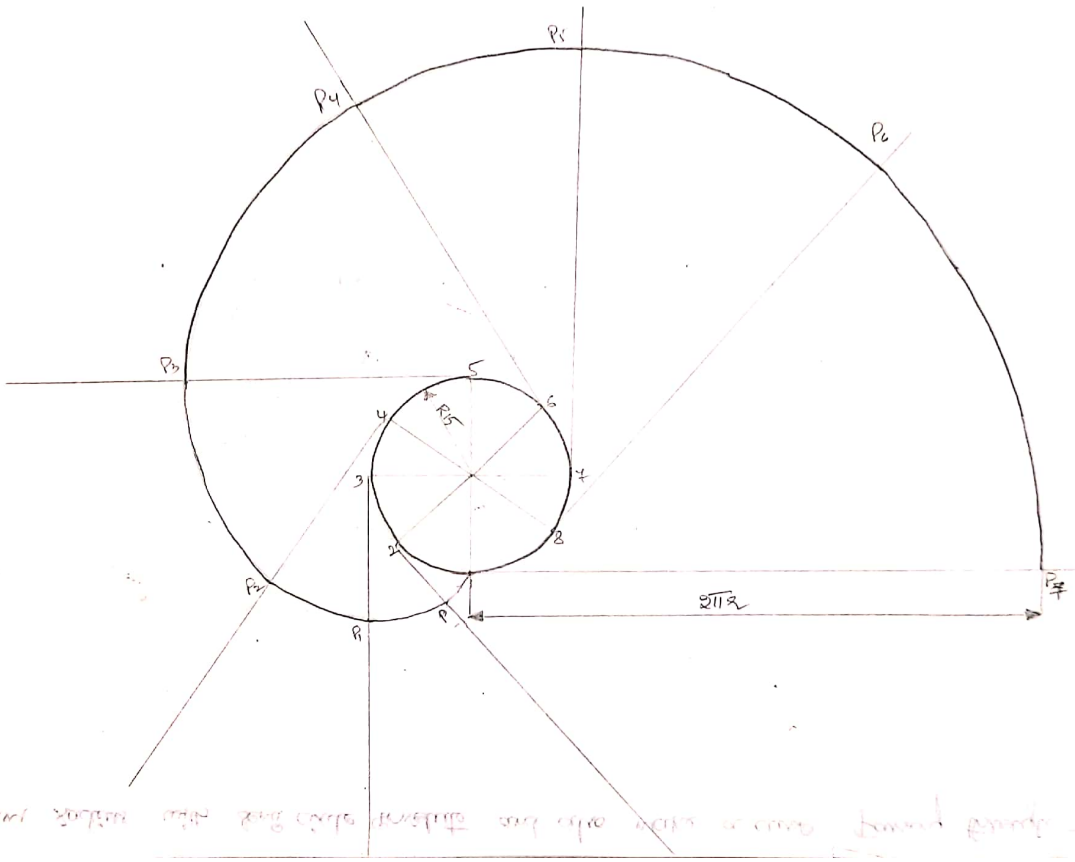
$\frac{360}{6}$



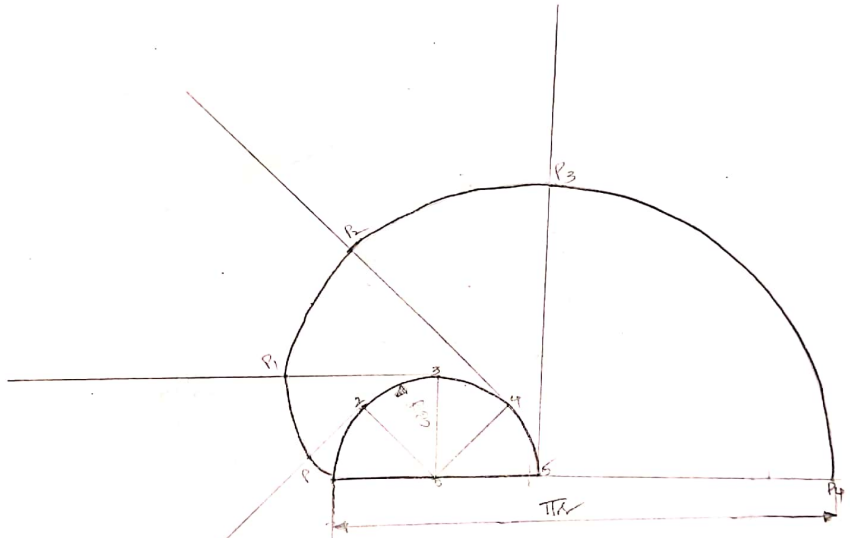
Q, Draw a circular Involute with 30mm dia and draw a rounded threaded curve from the points of circumference.



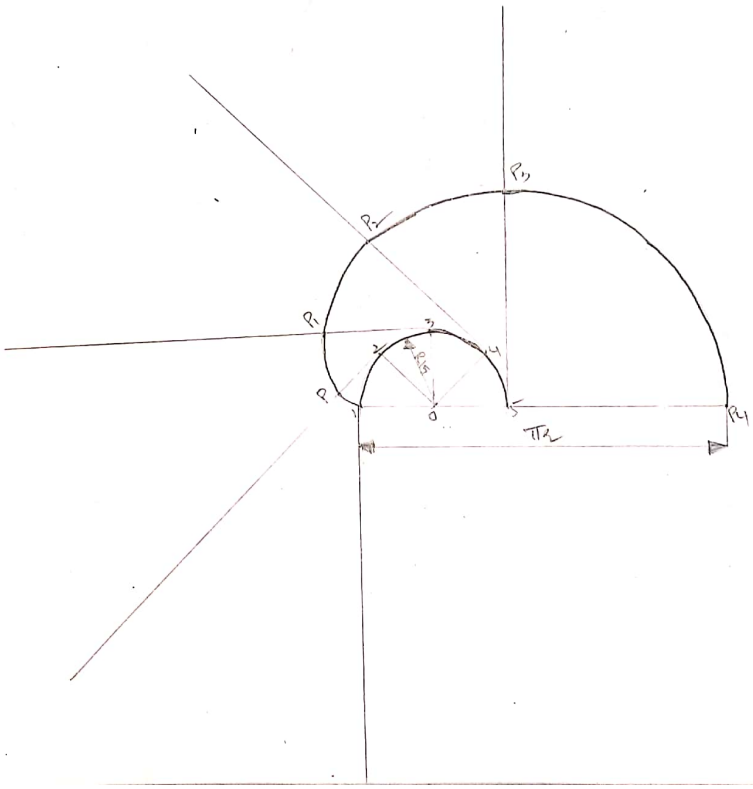
2, Draw a circular Involute 30mm radius and draw a wounded threaded curve from the points of circumference.



Q, Draw a 30mm radius ~~with~~ semi circle involute and also make a curve passing through the point.



Q, Draw a 30mm dia Semi circle Involute and also make a curve passing through the points.



Q, A point having 30mm dia is rolls on a 120mm dia disc find out the cycloid name and also generating a curve through the points

Q, A 50mm dia circular mirror is generating on a way without slipping and draw the cycloidical curve through the points.

19/9/17

Scales :-

A Scale is measures the distance between two points (long distances and short distances).

The Scales are classified as

1, Plane Scale

2, Diagonal Scale

3, Vernier Scale.— I. forward vernier Scale (or) Direct Vernier Scale (n-1)

II Backward Vernier Scale (or) Retrograted Vernier Scale (n+1)

Conversions

1CM = 10MM.

10CM = 100MM (or) 1 Decimeter

100CM = 1000 MM (or) 1 meter

10 Meter = 10000 mm (or) 1 decameter

1000 meters = 1 Km

1 Mile = 8 furlongs

1 furlong = 1720 Yards

1 Yard = 3' feets

1' feet = 12" Inches

1" Inch = 2.54 CM (or) 25.4 MM

1 Minute = 60 Sec

Formula

1, Representation fraction (Rf) = $\frac{\text{Length of the drawing}}{\text{actual length of the drawing}}$.

(or)

Scaling fraction (S.f)

3) Length of the Scale (L.S) = R.f x maximum length (read upto, Show upto, enough upto, measure upto)

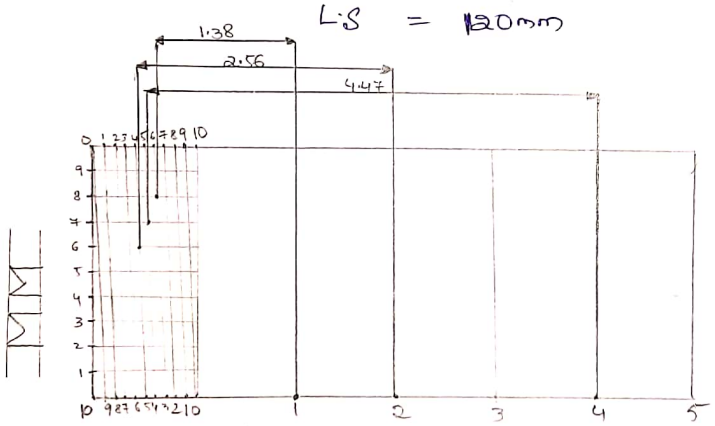
Q, construct a diagonal scale to read metres, ~~to~~ decimetres of a metre or a centimetre to a scale of $\frac{1}{50}$. The maximum length is measure upto 6M. And mark on the scale distances is 4.47M, 2.56M, 1.38M.

$$R.f = \frac{\text{Length of drawing}}{\text{actual length of drawing}} = \frac{1}{50}$$

Length of the scale = R.f x maximum length

$$= \frac{1}{50} \times 6M \times 100cm \times 10mm$$

L.S = 120mm



Q, An area of 144Sq/cm on a map represents an area 36Sq/Km on the field. find the Rf of the Scale of this Map and draw a diagonal Scale to Show Km, M, Cm. Indicating on the Scale a distance of 6Km, 7M, 5Cm

$$R.f = \frac{\text{length of the drawing}}{\text{Actual length of drawing}}$$

$$= \frac{144 Sq/cm}{36 Sq/Km} = \frac{12 cm}{6 Km}$$

$$= \frac{2cm}{1Km} = \frac{2}{1\times1000\times100}$$

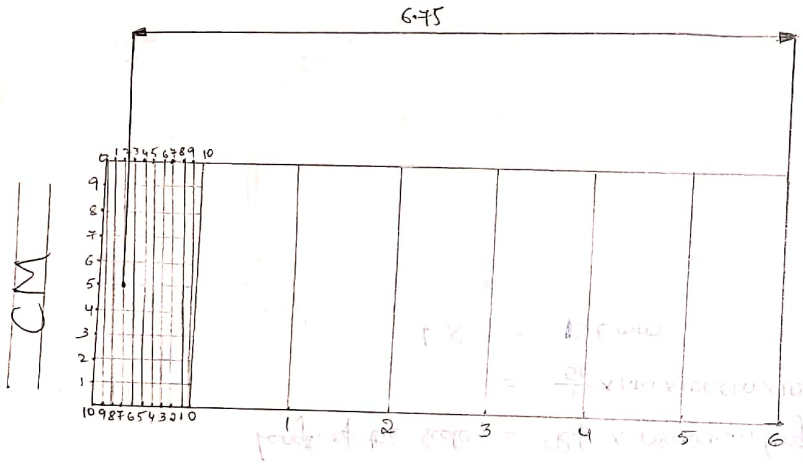
$$= \frac{2}{100000} = \frac{1}{50000}$$

$$= 2\times10^{-5}$$

L.S = R.f × Maximum length

$= 2\times10^{-5} \times 7Km \times 1000\times100\times10$

L.S = 140MM



Q) The actual length is 500 m is represented by a line of 15 cm on a drawing construct a diagonal scale to read upto 600 meter. Mark on a length of 568 meters, 432 m, 92 m, 80 m

$$R.f = \frac{\text{length of drawing}}{\text{Actual length of drawing}}$$

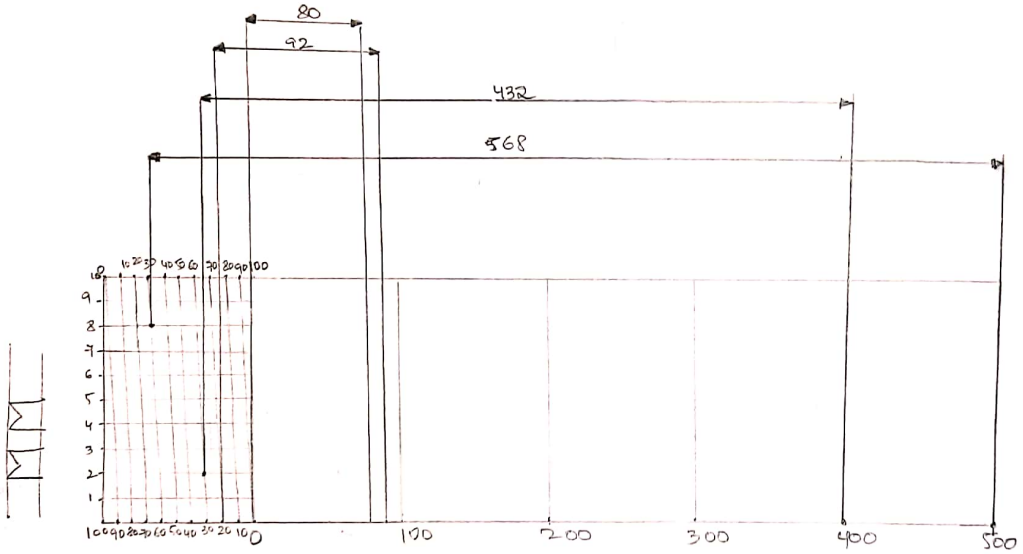
$$= \frac{15}{500 \times 100}$$

$$R.f = 3 \times 10^{-4}$$

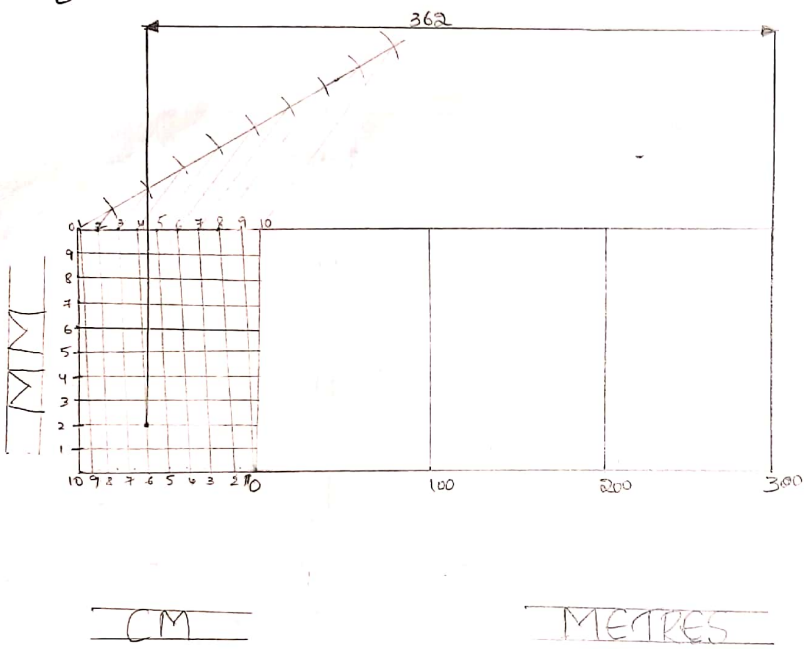
$L.S = R.f \times$ maximum length

$= 3 \times 10^{-4} \times 600 \times 10$

$L.S = 180$ mm



Q, A rectangular field of 2500 m^2 on a map by a rectangle of 5cm 4cm sides calculate the R.f. Draw a diagonal scale to read upto single meter and long enough measure upto 500 M. Mark a length of 362 on a scale.



$R.f = \frac{\text{length of the drawing}}{\text{actual length of the drawing}}$

$= \frac{20\ cm^2}{2500\ m^2}$

$= \frac{\sqrt{20}\ cm}{\sqrt{2500}} \quad \frac{1\ cm^2}{100\ m^2}$

$= \frac{4.47\ cm}{50\ m}$

$= \frac{1}{353 \times 100}$

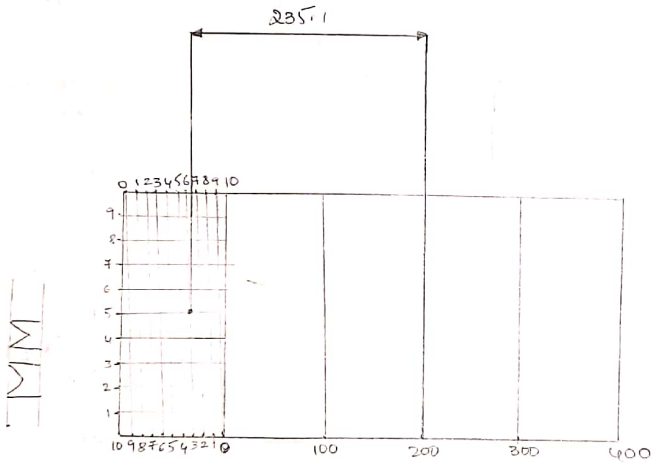
$= 2.8$

$L.S = R.f \times \text{Maximum length}$

$= 2.8 \times 500 \times 100 \times 10$

$= 140000\ cm$

5) The area of field is 50000 Sq.m the length and breadth of the field on the map 10cm and 8cm respectively. construct a diagonal scale which can be read upto 1m mark the length of 235m on the scale what is the Rf of the scale.



$$R.f = \frac{\text{length of the drawing}}{\text{Actual length of the drawing}}$$

$$= \frac{80cm^2}{50000sm^2}$$

$$= \frac{\sqrt{80cm}}{\sqrt{50000}cm}$$

$$= \frac{8.9cm}{223.6 \times 100}$$

$$= 3.9\ cm$$

L.S = Rf x Maximum value should round upto 250

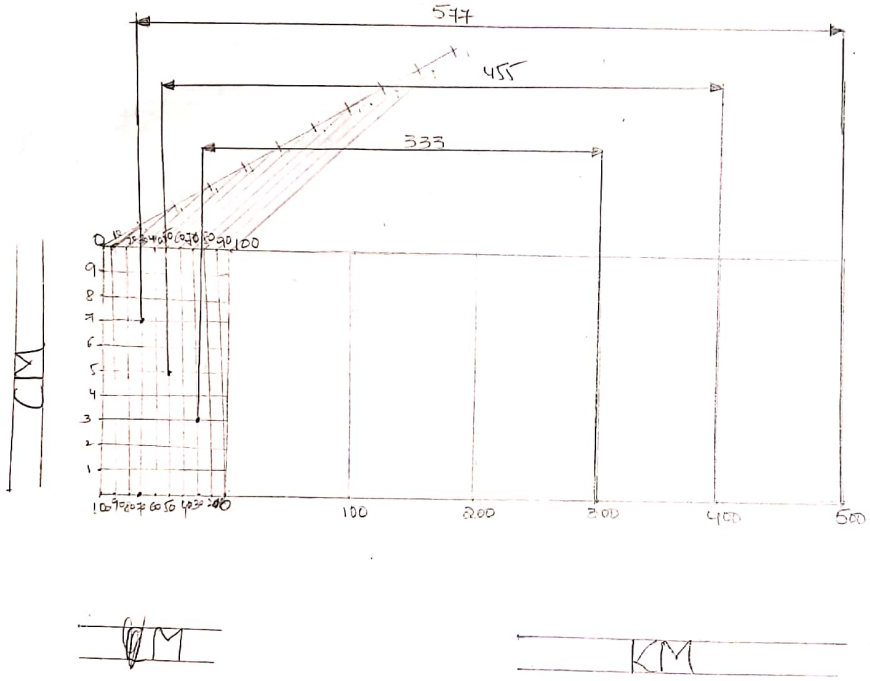
$$= 3.9 \times 250 \times 100$$

$$= 975$$

$$= 1000cm$$

$$= 100m$$

Q, The distance between two stations A and B is 100 km and its equivalent distance on a railway map measures 2.5 cm what is the R.f ?. Draw a diagonal Scale showing Single kms and show on the Scale the following distances are 577 kms, 455 kms, 333 kms



$R.f = \frac{\text{length of the drawing}}{\text{Actual length of the drawing}}$

$= \frac{2.5 \text{ cm}}{100 \text{ km}}$

$= \frac{2.5}{100 \times 1000 \times 100}$

$= 2.5 \times 10^{-5}$

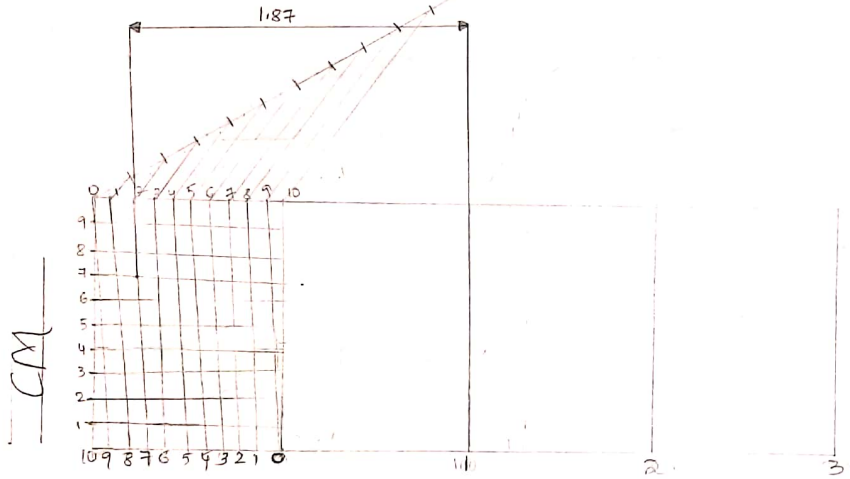
L.S = R.f x maximum length

$= 2.5 \times 10^{-5} \times 600 \times 1000 \times 100 \times 10$

$= 150 \text{ mm}$

Q An area of $63cm^2$ on a map represents an area of $1.75 Km^2$ on a field Construct a scale to measure upto 2.5 Km and capable to show 100^{th} of Km Indicate 1.87 Km on the scale

Vernier scale



$$R.F = \frac{\text{length of the drawing}}{\text{actual length of drawing}}$$

$$= \frac{63cm^2}{1.75 Km^2} = \frac{\sqrt{63}\,cm}{\sqrt{1.75}\,Km}$$

$$= \frac{7.9\,cm}{1.3 \times 1000 \times 100}$$

$$= 6.07 \times 10^{-5}$$

$$L.S = R.F \times \text{Maximum length}$$

$$= 6.07 \times 10^{-5} \times 2.5 \times 1000 \times 100 \times 10$$

$$= 151 \text{ (reduced to 150)}$$

Q) The area of Square shaped land is equal to 0.6561 Hectares which is represented on a map by a similar Square shape of 9 Sq cm. Calculate the R.F of the Map based on the R.f value, construct a diagonal Scale to read upto maximum of metre on the map. The requires maximum Scale to be measure 700 M. Show a dimensions of 5 Sq M on the Scale.

10 M = 1 decametre

$$R.f = \frac{\text{Length of the drawing}}{\text{Length of the actual object}}$$

$$= \frac{9 \text{ Sq cm}}{0.6561 \text{ Hectares}}$$

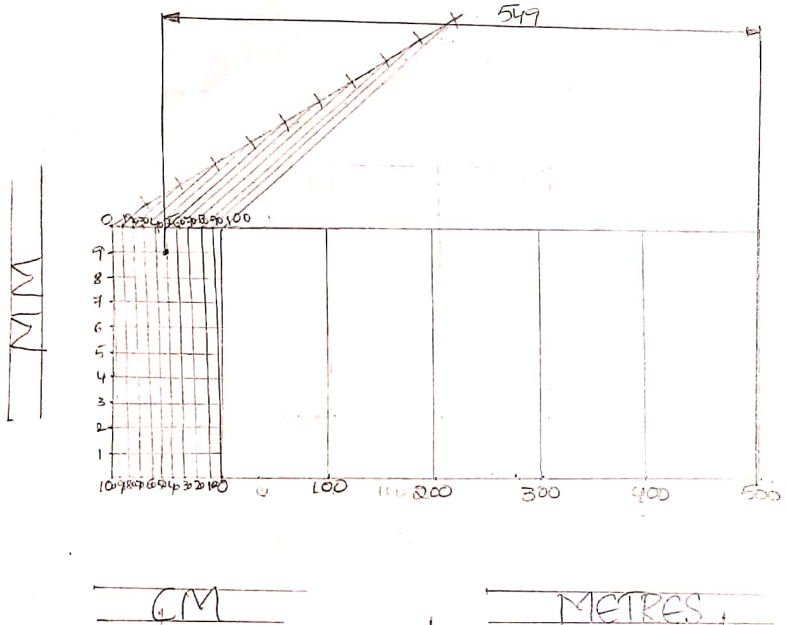
$$= \frac{\sqrt{9} \text{ cm}}{\sqrt{0.6561} \text{ Hec}} = \frac{3 \text{ cm}}{0.81 \text{ Hec}}$$

$$= \frac{3}{0.81 \times 10^4 \text{ cm}} = 3.7 \times 10^{-4}$$

1:8 = R.f × Maximum length

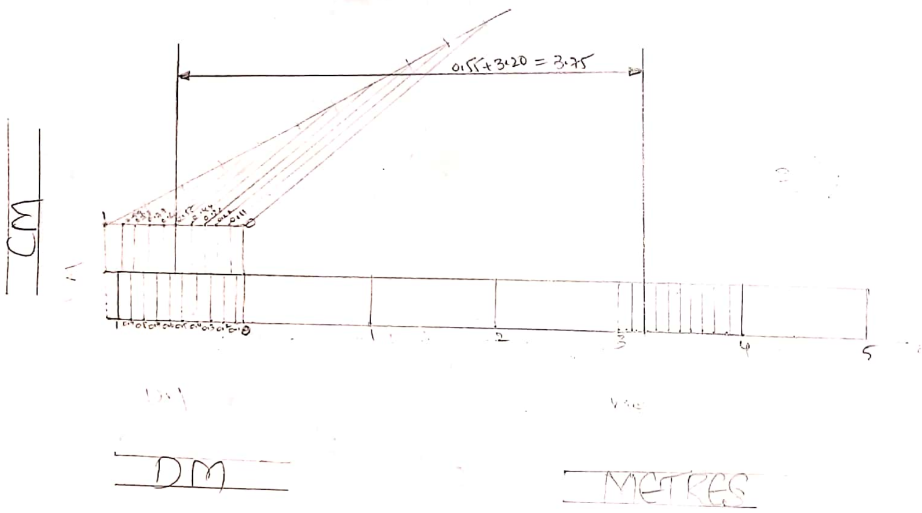
$= 3.7 \times 10^{-4} \times 700 \times 100 \times 10$

$= 259$ mm (round upto 260)



Q, A Vernier Scale

1) Draw a vernier scale of R.f = $\frac{1}{75}$ to show metres, Decimetres, centimetres and to measure upto 6M. Mark the length of 3.75M



(80)

- Increasing Scale to 160
2:1

$R.f = \frac{\text{length of the drawing}}{\text{Actual length of drawing}}$

$= \frac{1}{75}$

$L.S = R.f \times \text{Maximum length}$

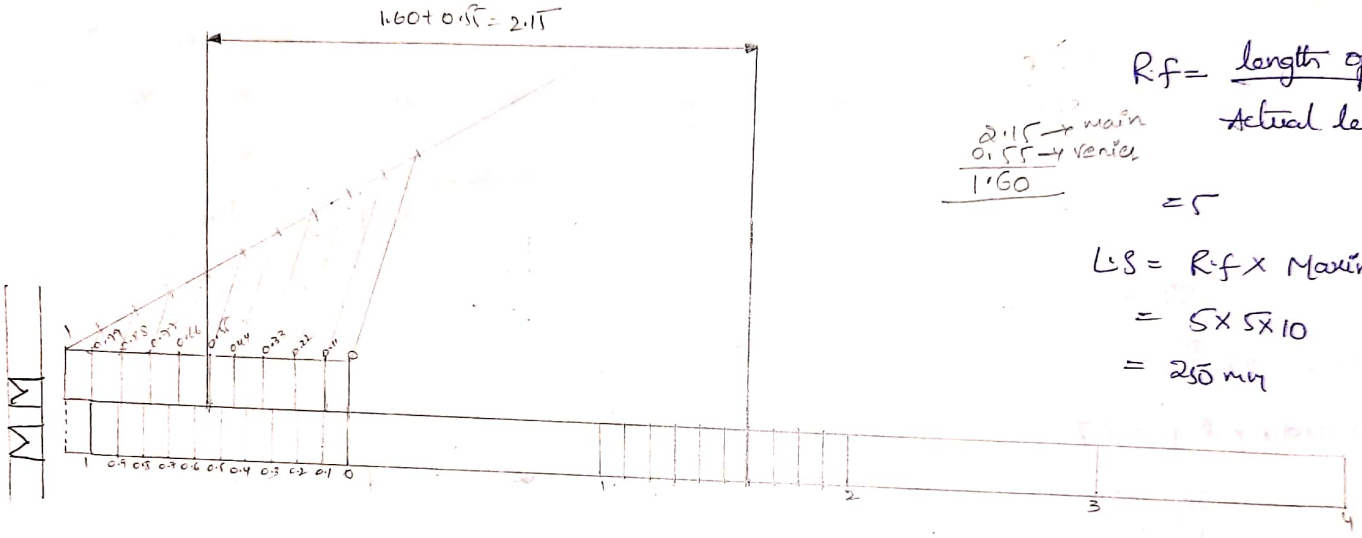
$= \frac{1}{75} \times 6 \times 100 \times 10$

$= 80$

[Increasing Scale to 160 means 2:1]

[Again reduce Scale to 150 to remove decimal values]

2, A construct of vernier scale of R.f = 5 to measure upto 5cm mark on the scale distances 2.15cm.



R.f = $\frac{\text{length of drawing}}{\text{Actual length of drawing}}$

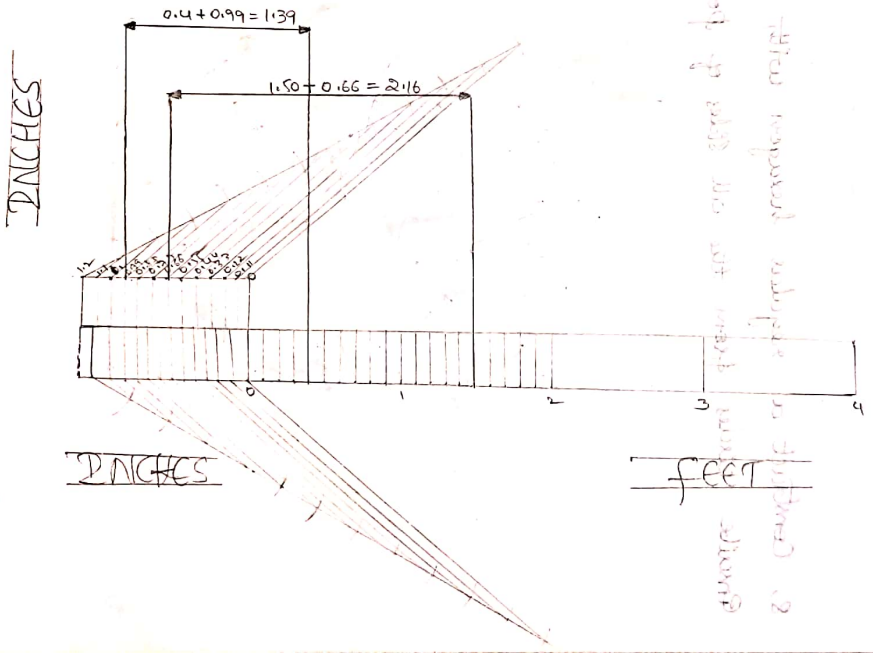
2.15 → main
0.55 → vernier
1.60

$= 5$

L.S = R.f × Maximum length
$= 5 \times 5 \times 10$
$= 250$ mm

2) (Draw of a vernier scale of Rf = 5·to read 1 Guard and 1825 CM, measure upto 5 CM mark on the scale distance the 2.15 CM)

3) Construct a vernier scale of 1 1/4" = 1 foot to measure upto 5 feet and showing feet and inches Indicate the distance of 2.16 feets, 1.39 feets.



$$R.f = \frac{\text{length of drawing}}{\text{Actual length of drawing}}$$

$$= 1.\frac{1}{4}''$$

$$= 0.25$$

$$= 1+0.25$$

$$= \frac{1.25}{1\times 12} = 0.104$$

$$L.S = R.f \times \text{Maximum length}$$

$$= 1.104 \times 12 \times 25.4$$

$$= 150.75 \text{ [Reduced to 150]}$$

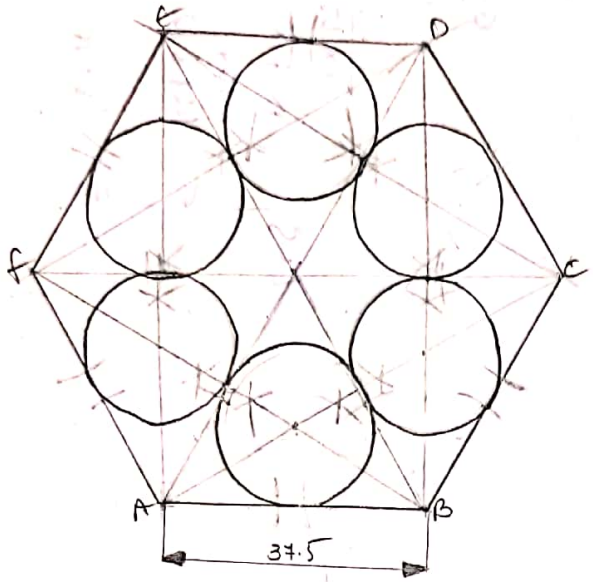
0.99
0.4
1.39

2.16
0.66
1.50
2.76

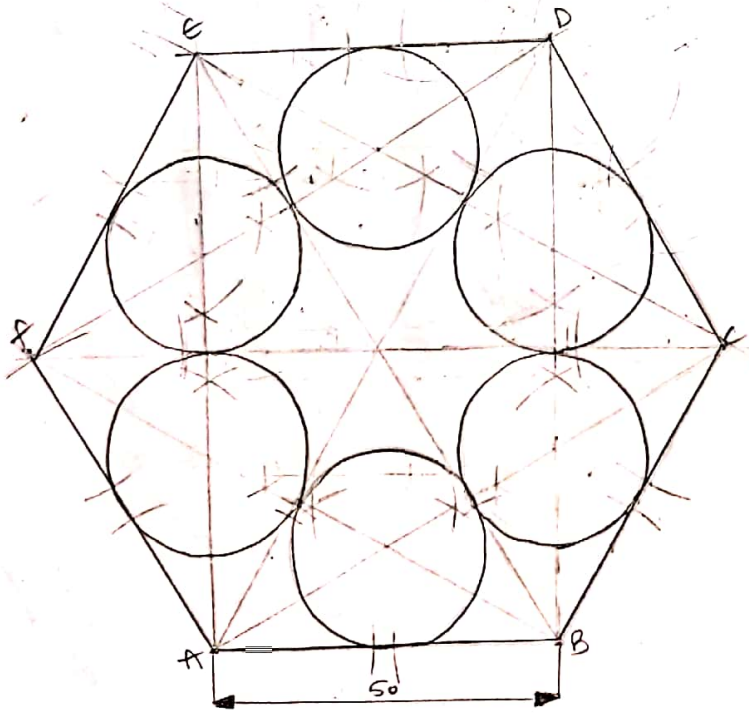
Polygons

7, Construct a regular ~~hexago~~ pentagon with 80mm Sides and Inscribe circles from the all sides of polygon.

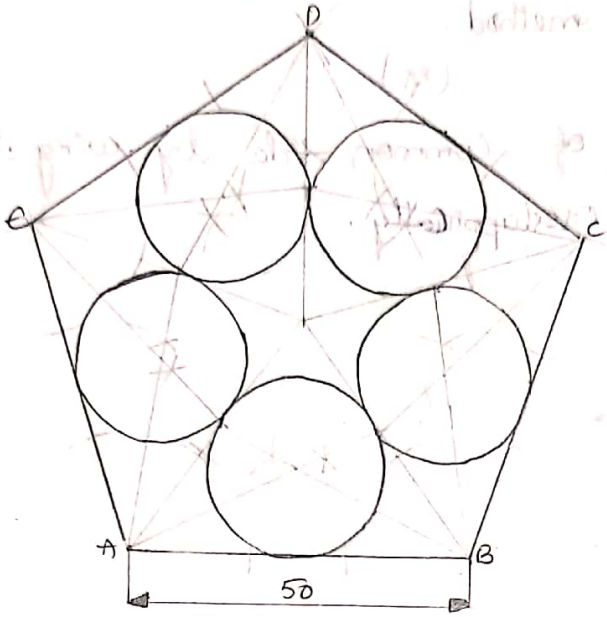
→ 10. Ans



8, Construct a regular hexagon with 50mm sides and Inscribe circles from the all sides of polygon.

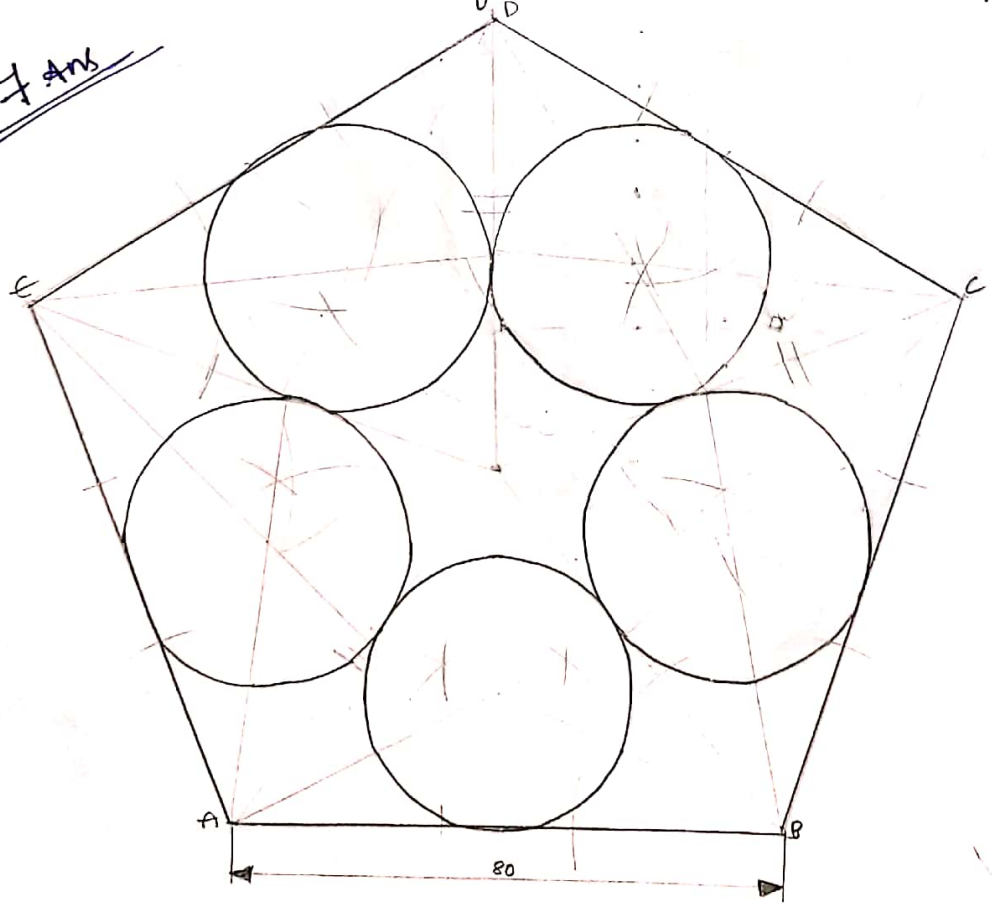


9, Construct a regular pentagon with 50mm sides and Inscribe circles from the all sides of polygon.



10, Construct a regular hexagon with 37.5mm sides and Inscribe circles from the all sides of polygon.

Ans

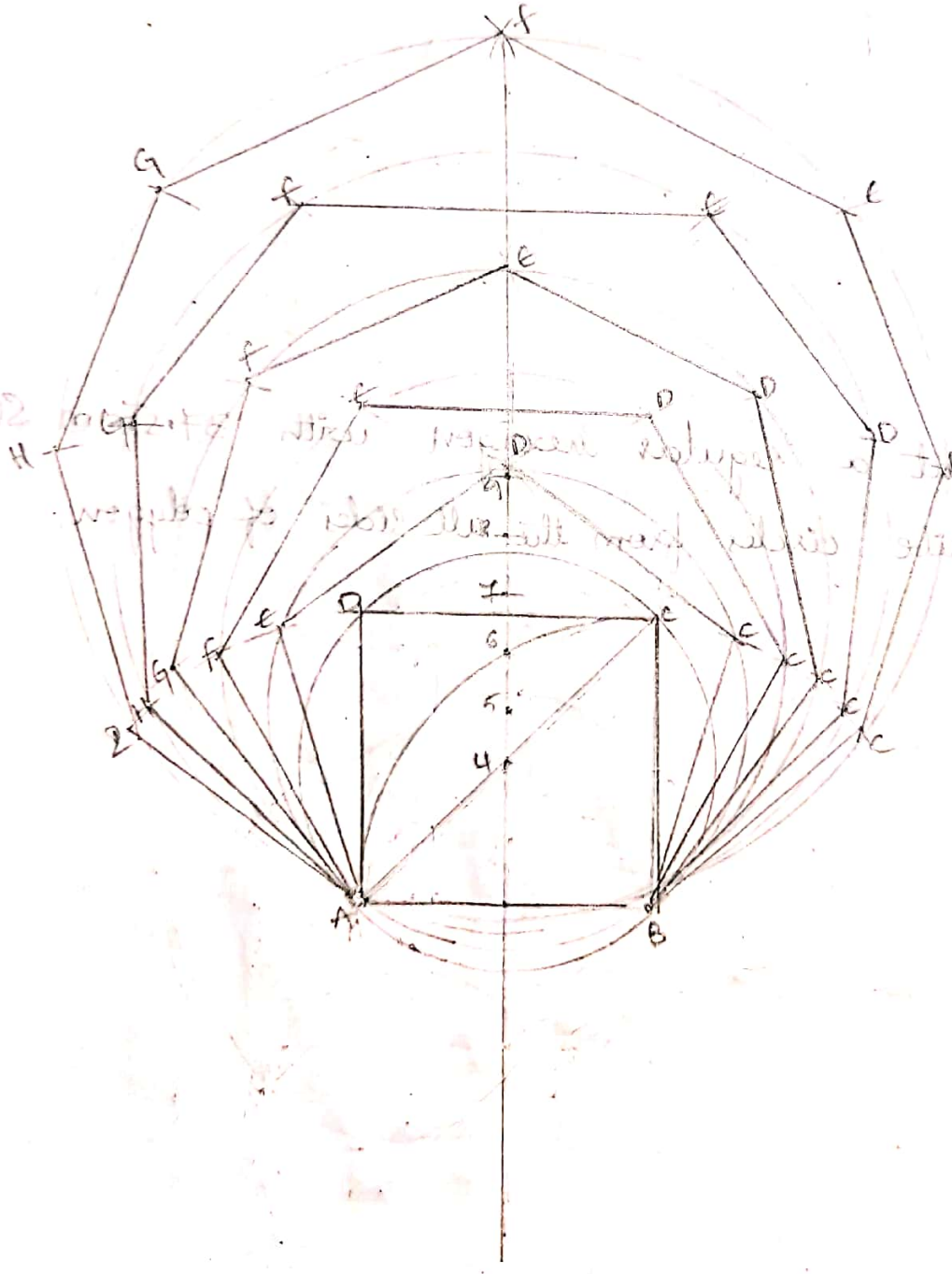


OVER LAPPING

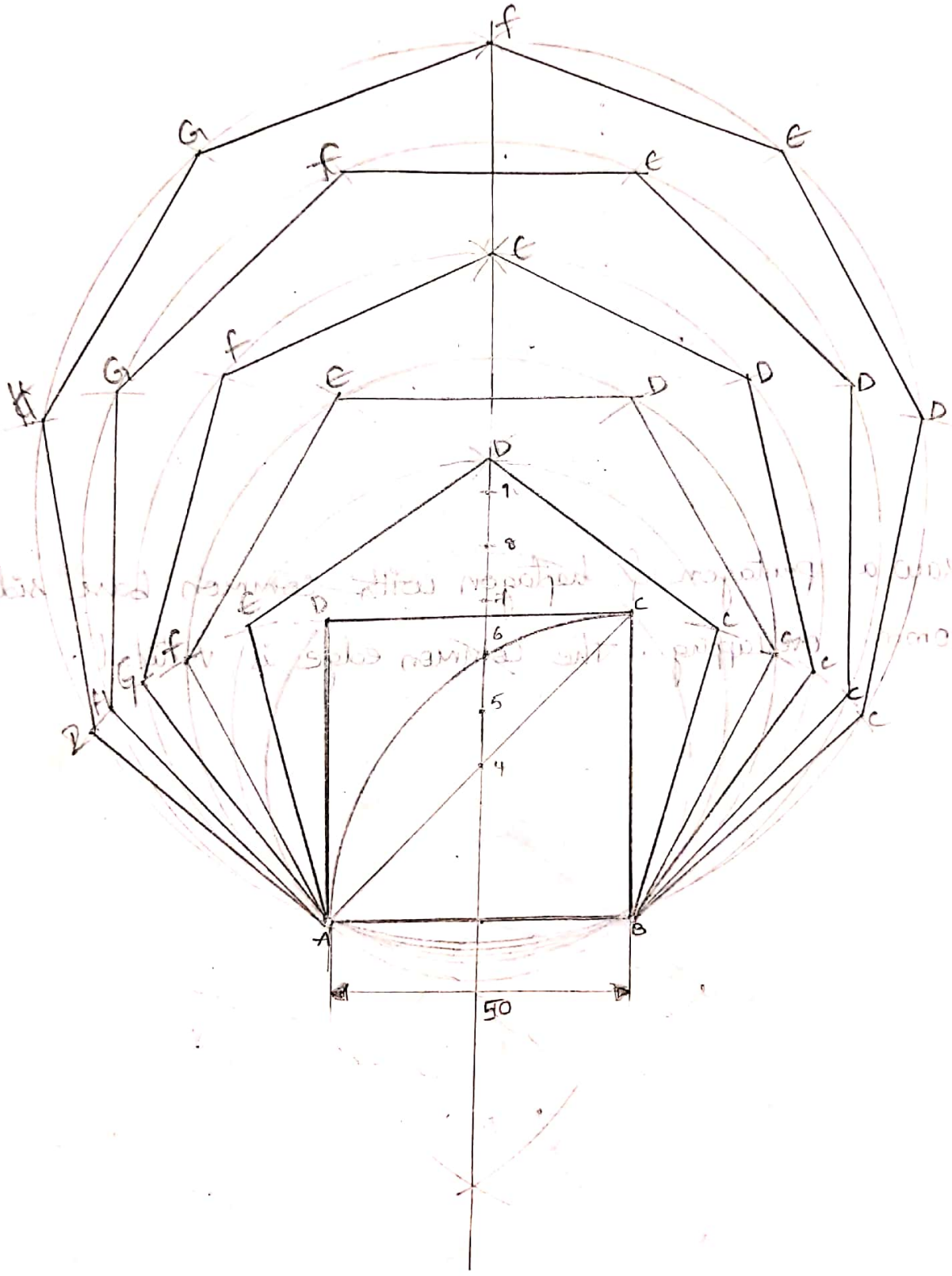
1, Draw a Square, pentagon, hexagon, heptagon, octagon, nanogon with the same common edge of 40mm sides by using of overlapping method.

(or)

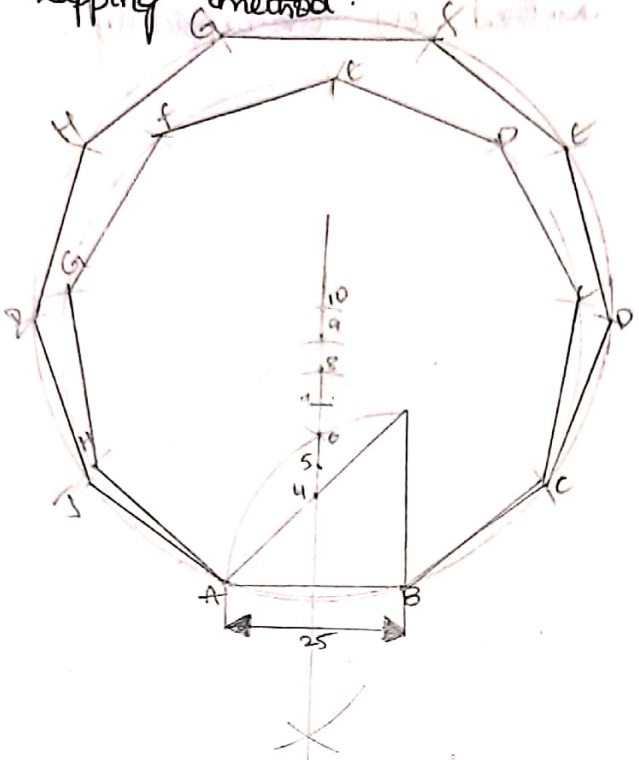
Draw the polygons of common side by using the over lapping method (or) overlappingally.



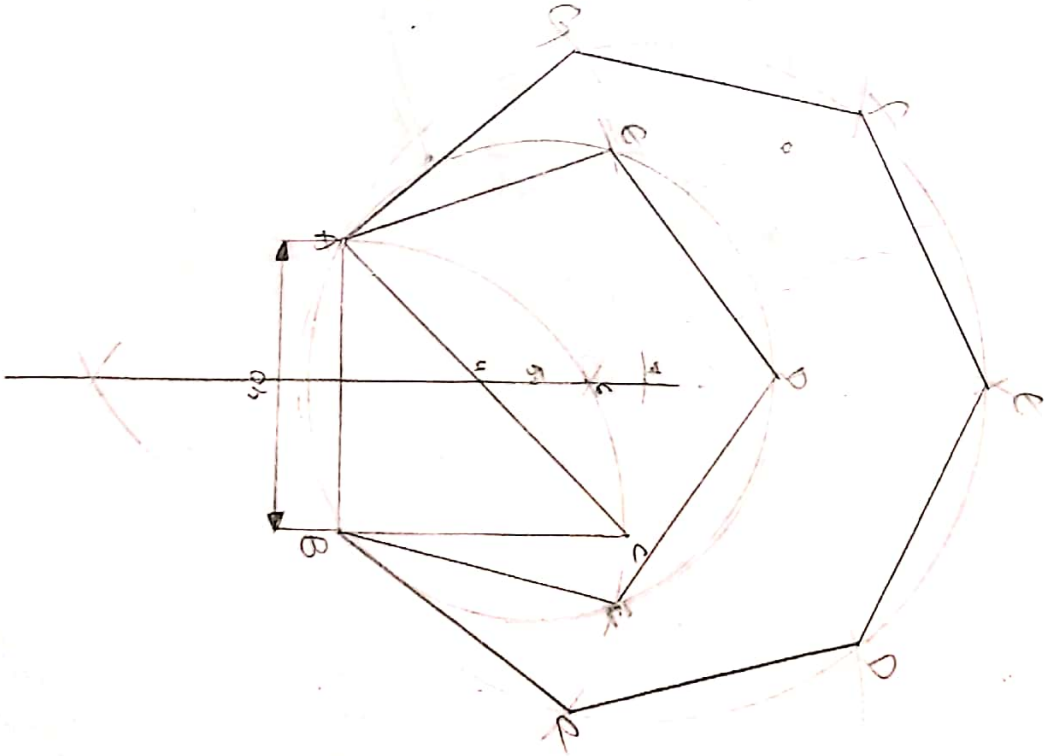
2) Draw the polygons of common side by using the overlapping method (or) overlappically.



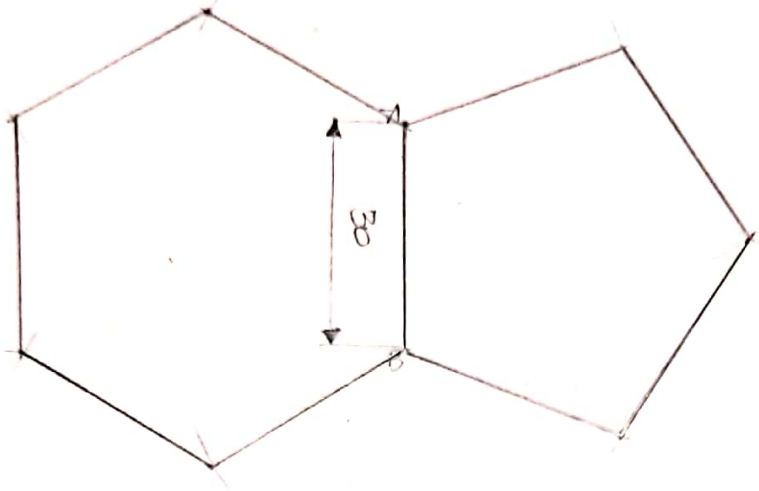
3, Draw a Nanogon & Decagon with side 25mm by using overlapping method.



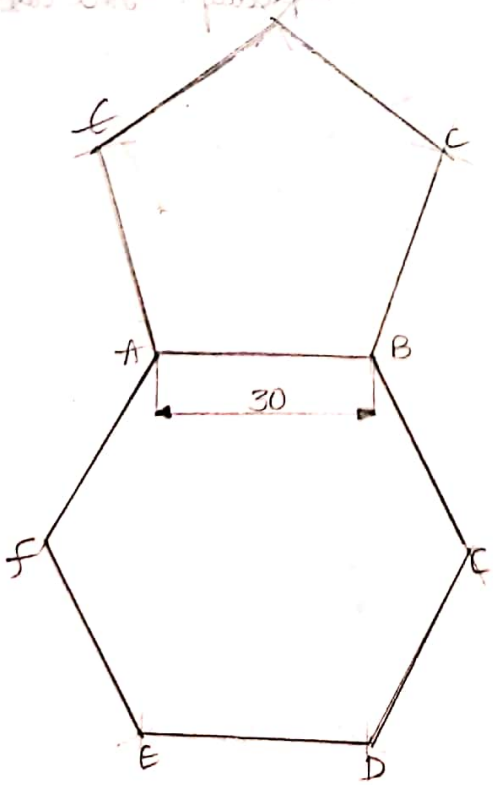
4, Draw a pentagon & heptagon with common base side is 40mm overlapping. The common edge is vertical.



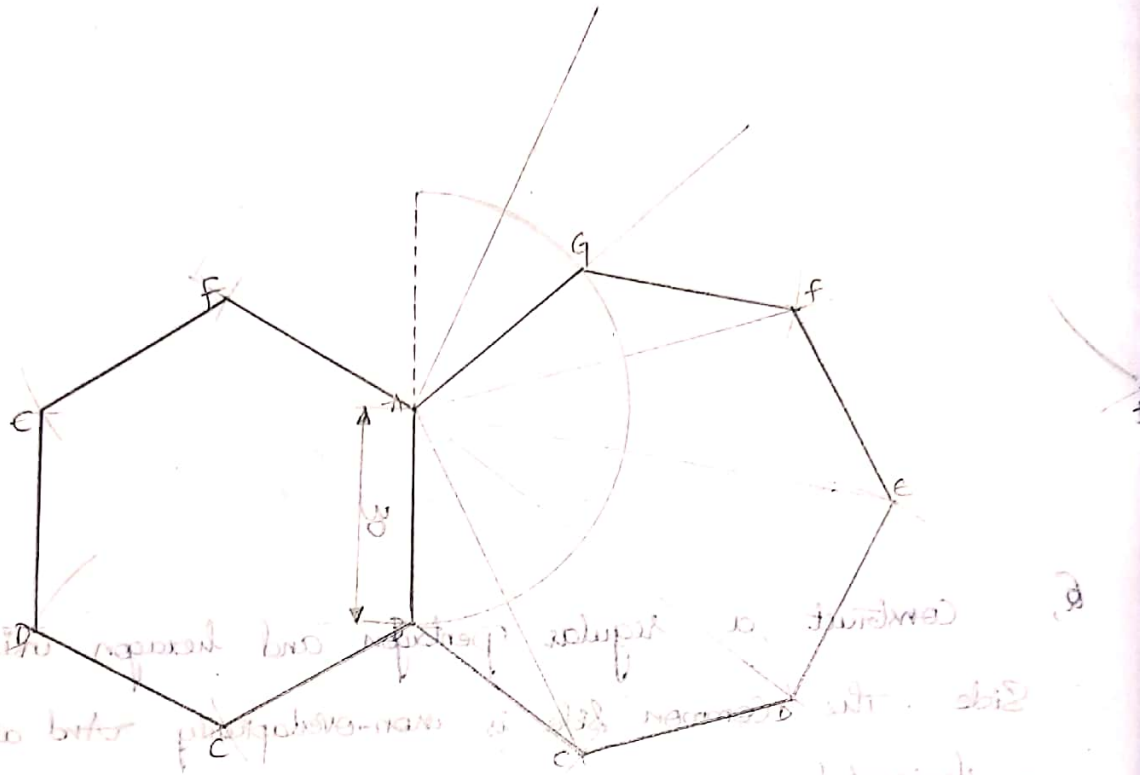
5, Construct a regular Pentagon and hexagon with 30mm Side. The common side is non-overlapically. And also it is vertical.



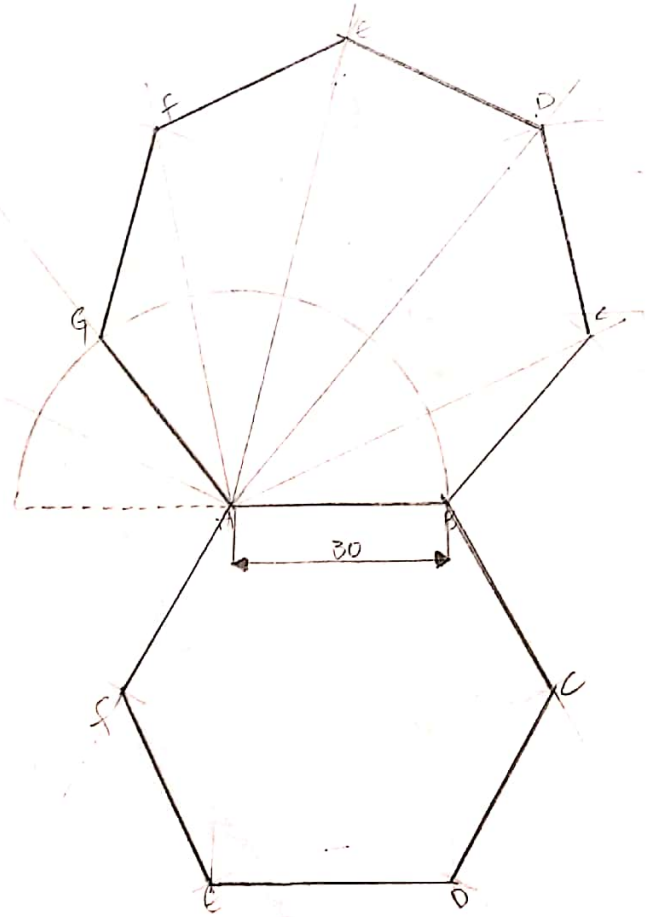
6, Construct a regular pentagon and hexagon with 30mm Side. The common side is non-overlapically. And also it is Horizontal.



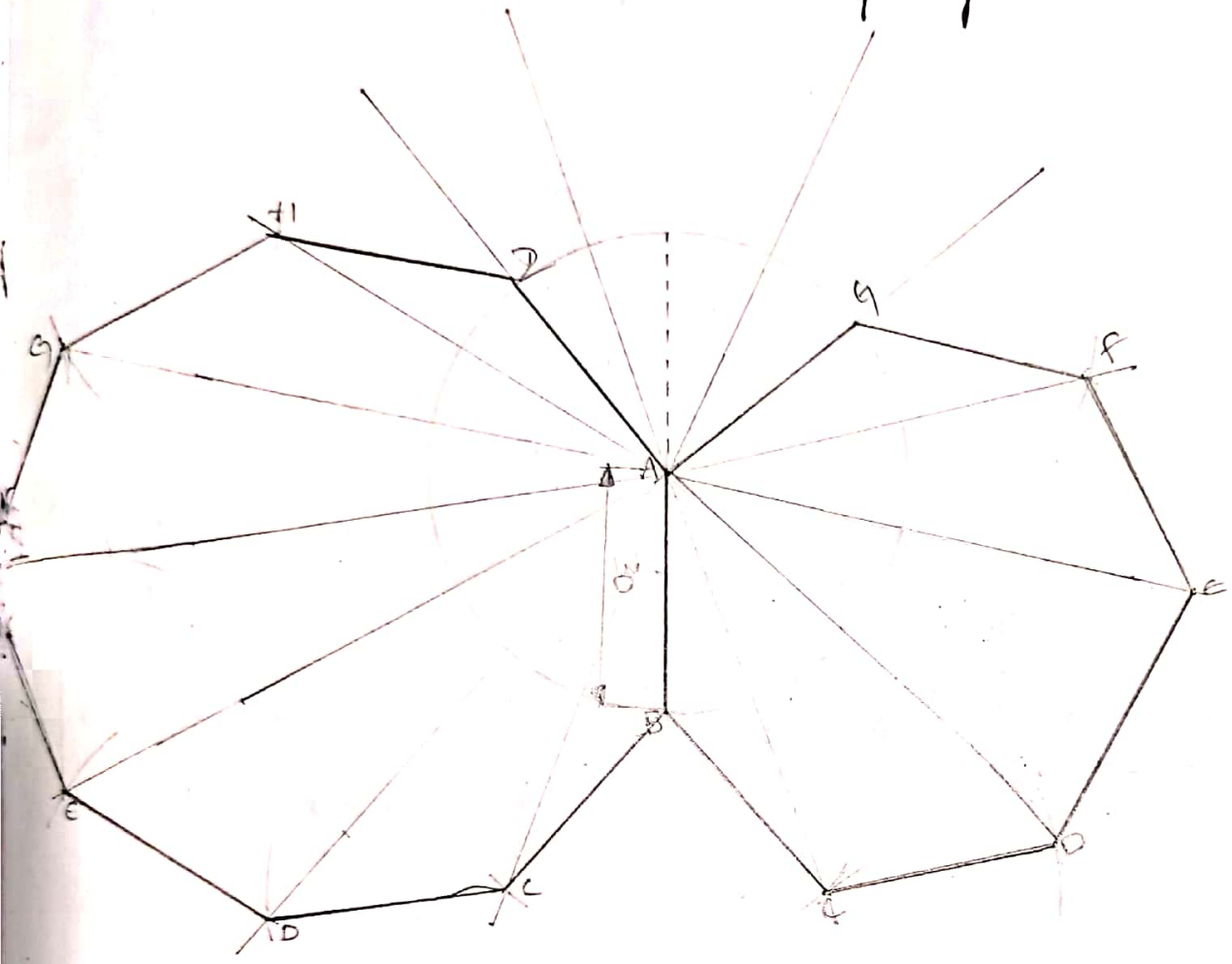
7, Construct a regular hexagon and heptagon with 30mm side. The common side is non-overlapically. And also it is vertical.



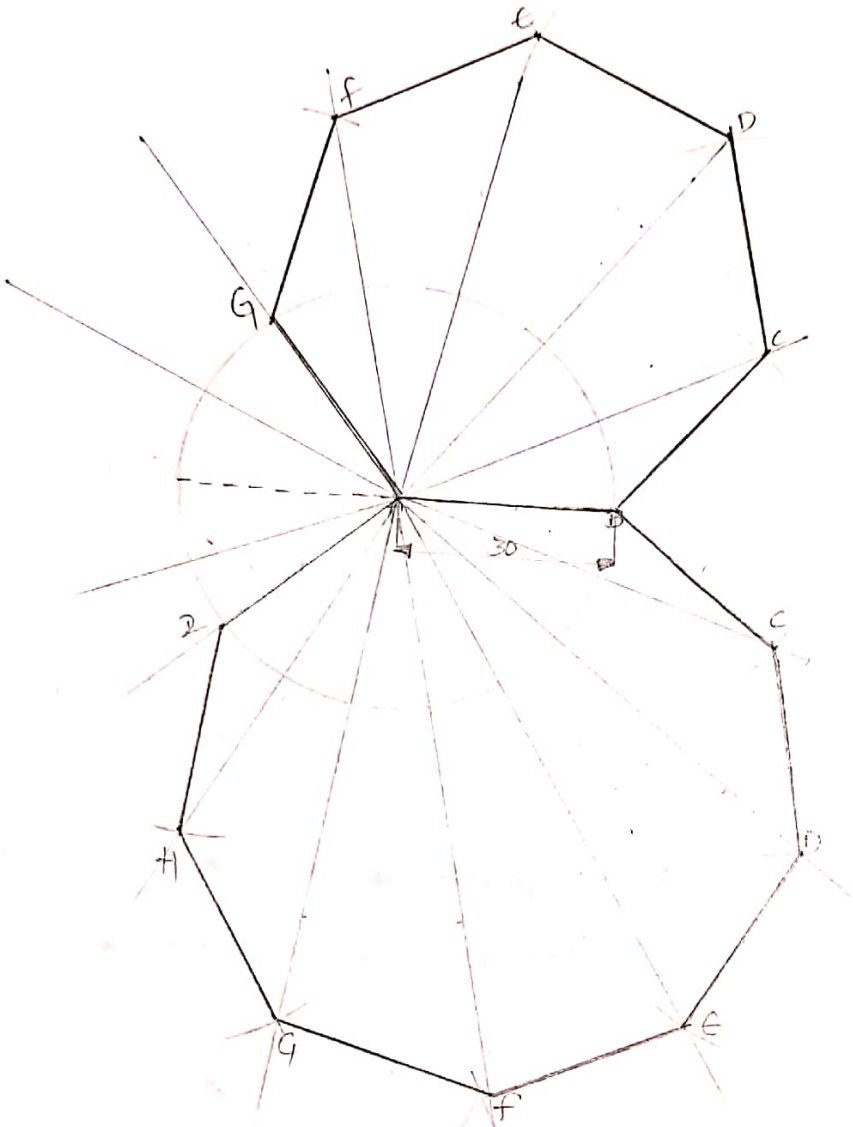
8, Construct a regular hexagon and heptagon with 30mm side. The common side is non-overlapically. And also it is horizontal.



9, Construct a regular heptagon and nanogon with 30mm side. The common side is non-overlapically. And also it is vertical.

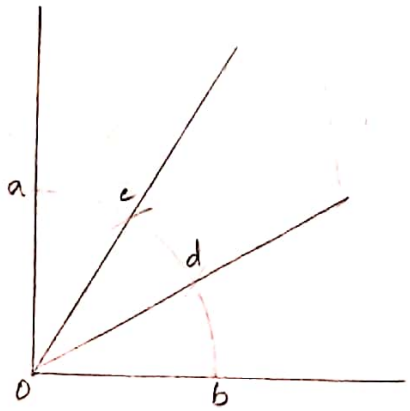


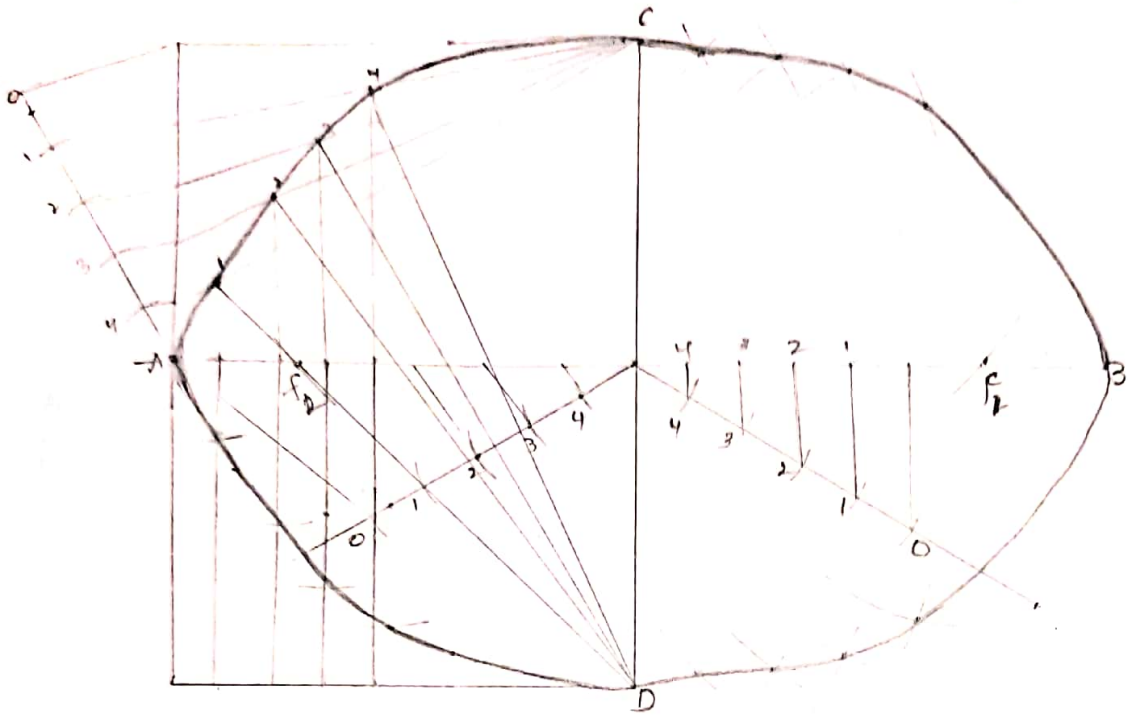
10, Construct a regular heptagon, Nanogon with 30mm Sides. the common side is non-overlapping and also it is horizontal

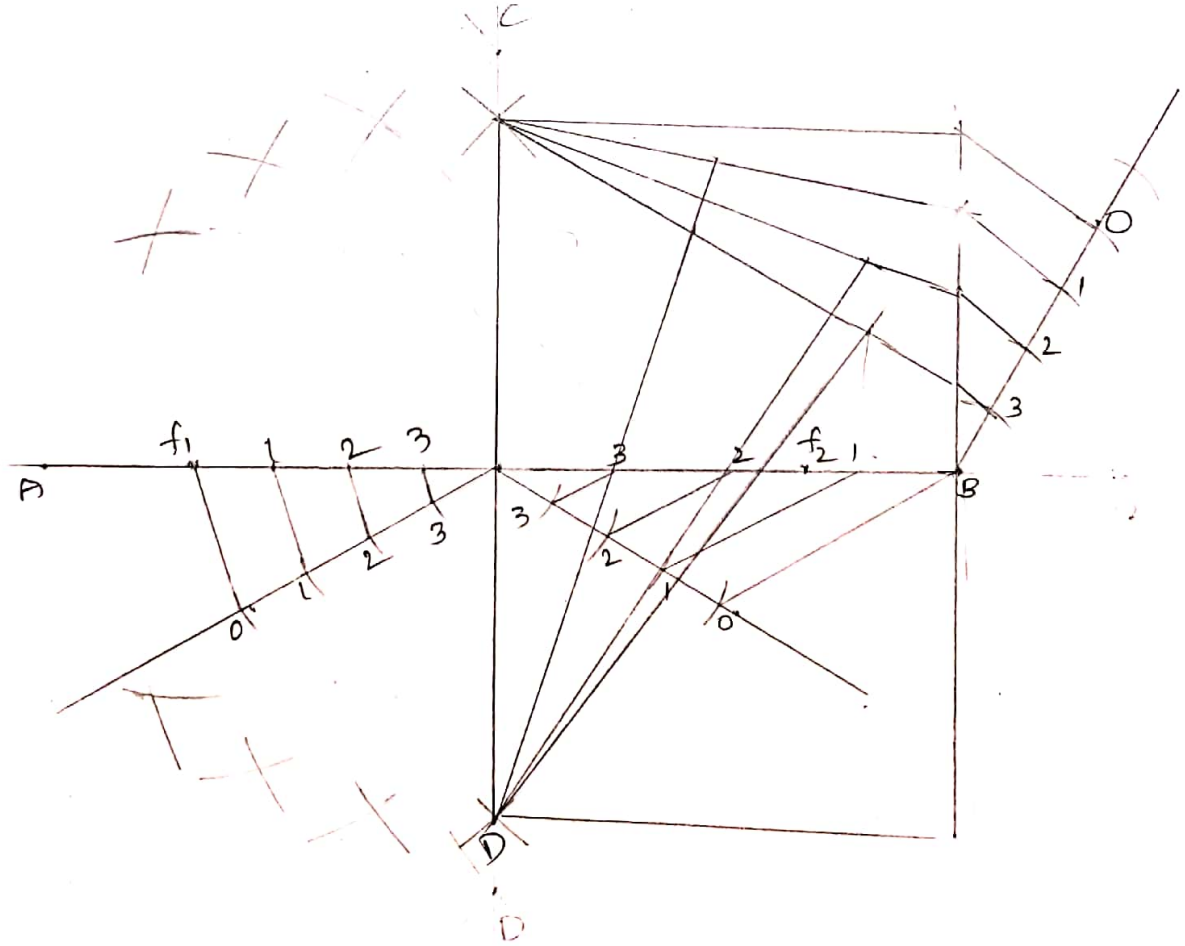


11, Construct a 90° right angle with 50mm sides and trisect ~~the~~ right angle.

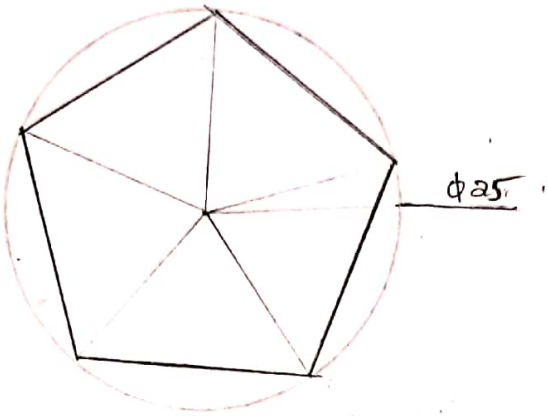
half of the radius



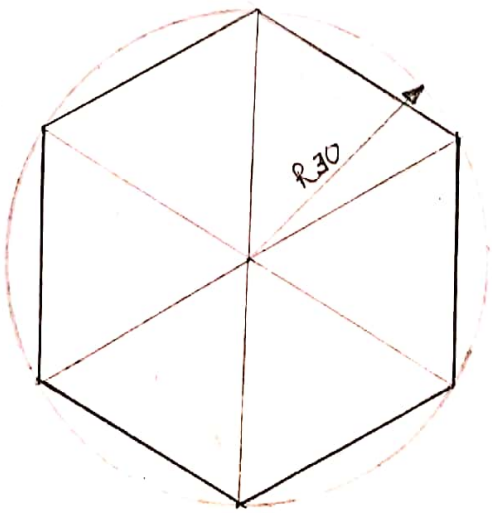

C
A
B
D
O
1
2
3
4


C
A
B
D
O
1
2
3
f1
f2

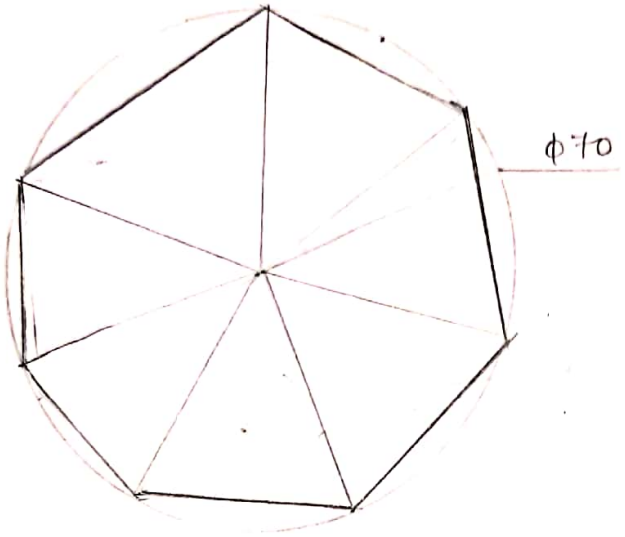
1, Draw a 50mm dia circle and Inscribe a pentagonal polygon in it.



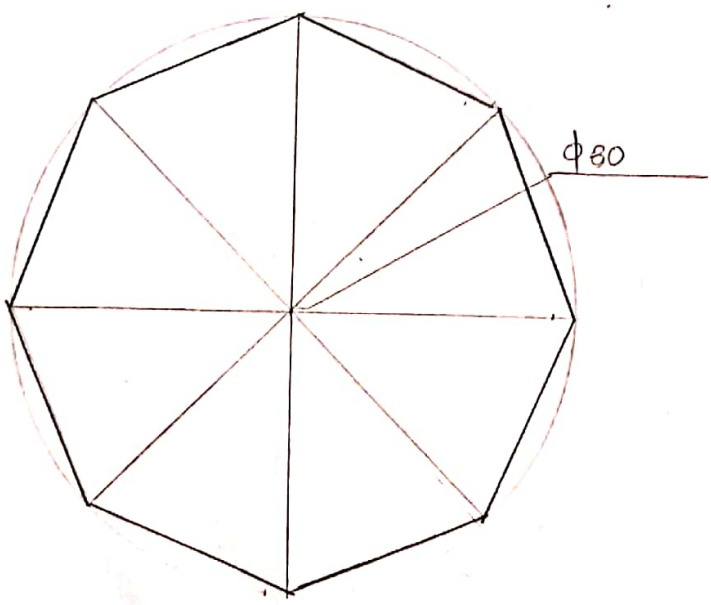
2, Construct a hexagon is Inscribe in a 30mm radius circle.



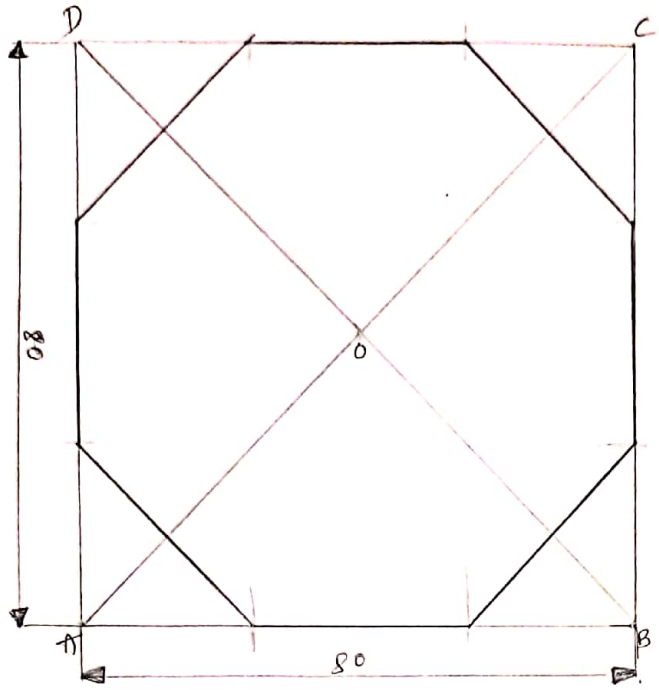
3, Draw a Heptagon is Inscribing in a 70mm dia of circle.



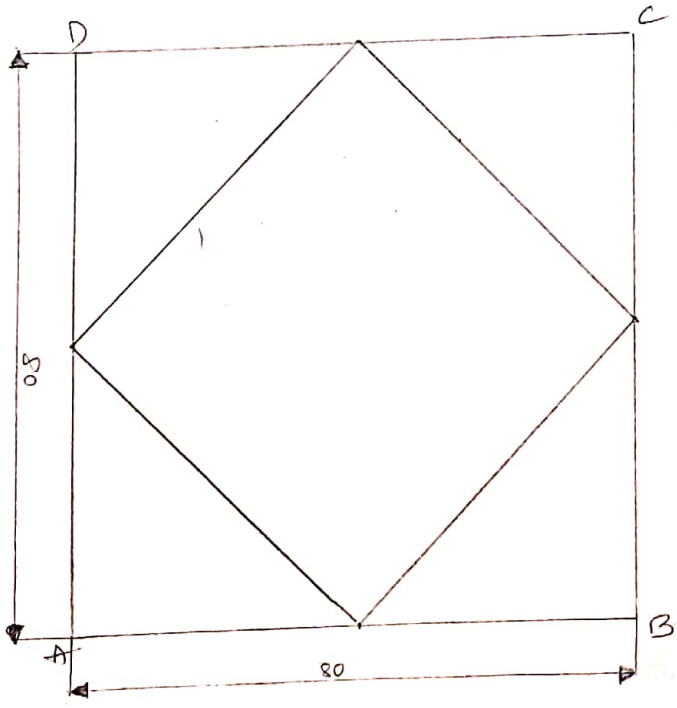
4, Inscribe a octagon in a 80mm dia of circle.



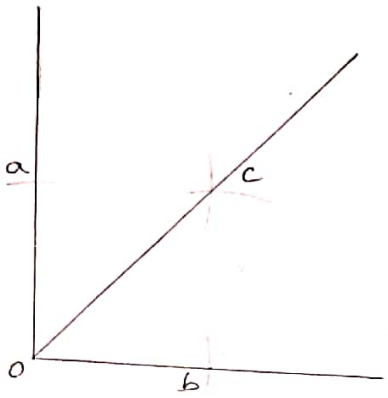
5, Construct a 80x80mm Square and inscribe a octagon in it.



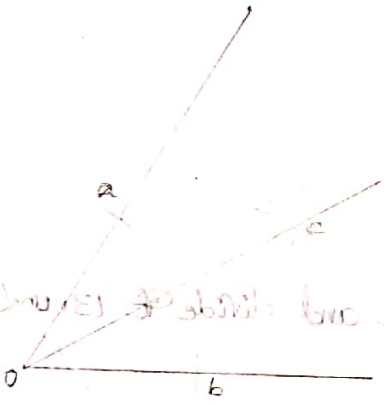
6, Construct a 80x80mm Square and draw another Square in it from the vertices of sides.



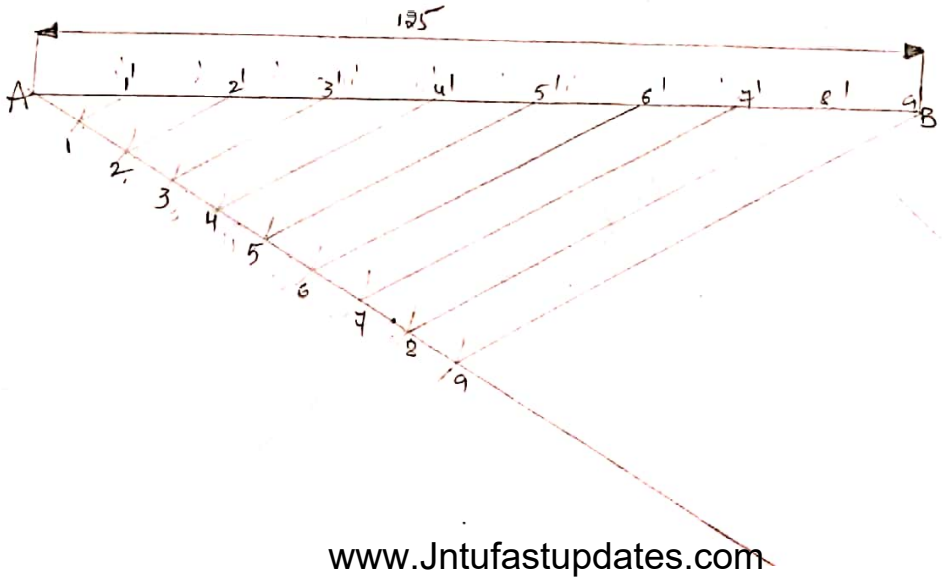
12, Construct a 90° right angle with 50mm sides and bisect the right angle.



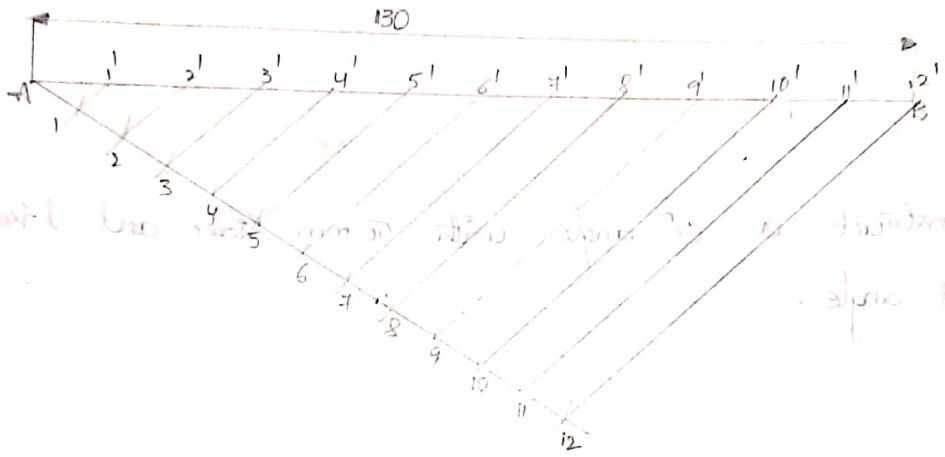
13, Construct a 60° angle with 50 mm sides and bisect the right angle.



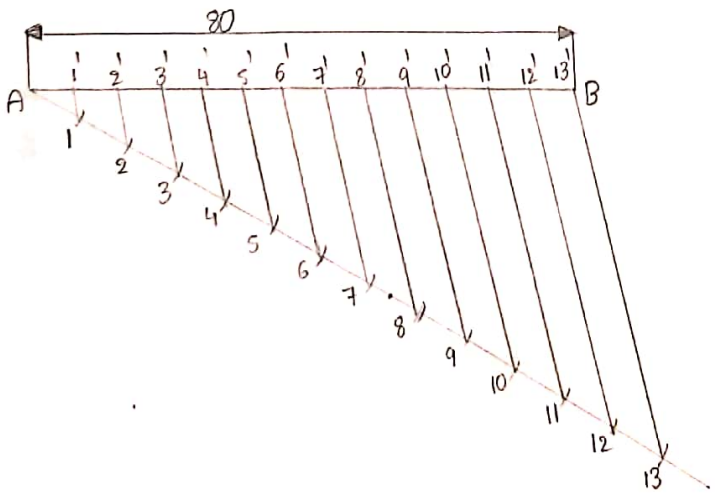
14, Draw a 125mm long line and dividing it a number of equal parts



15, Construct a horizontal straight line with your convenient distance and made it 12 number of equal parts.



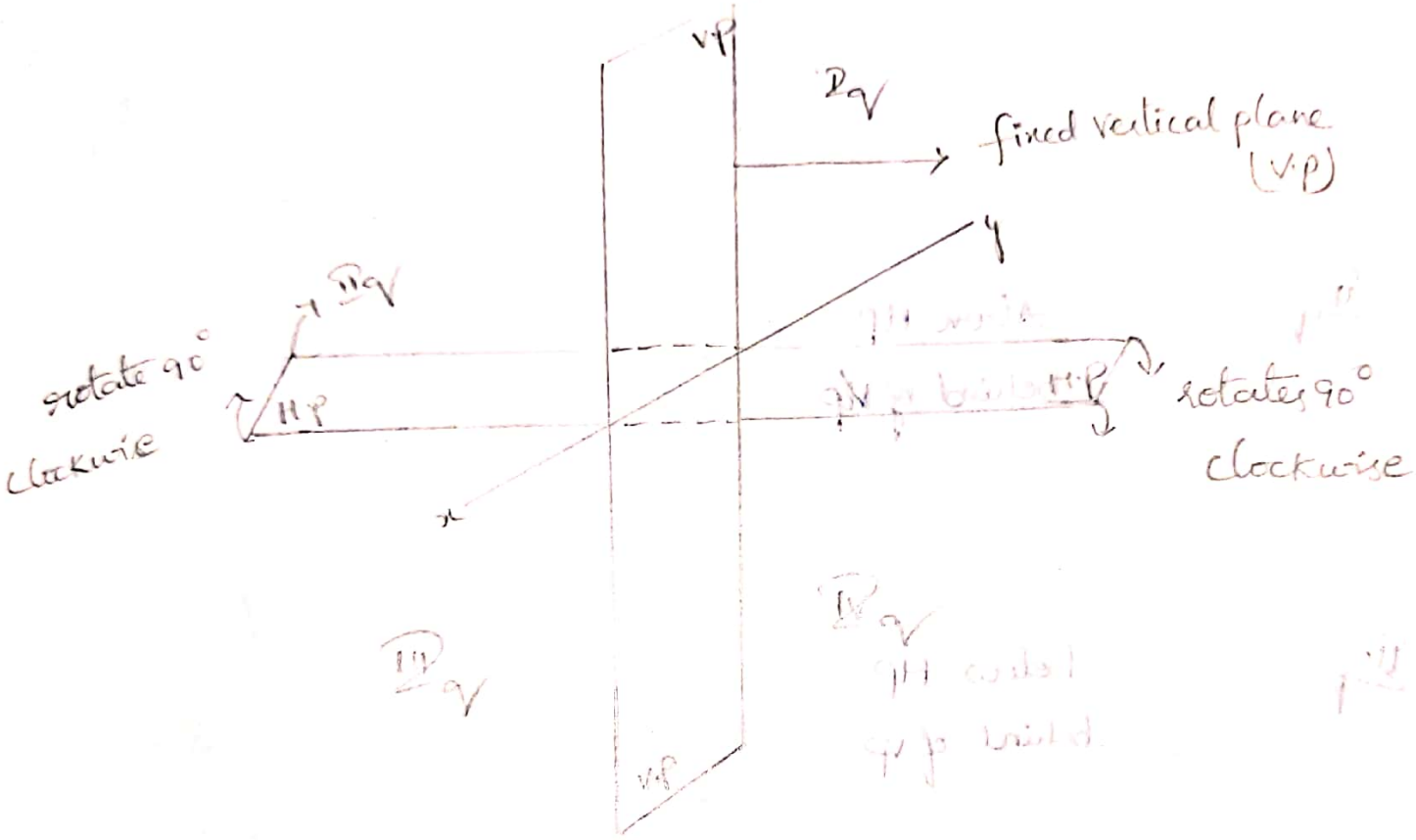
16, Draw a 80mm long line and divide it 13 number of equal parts.

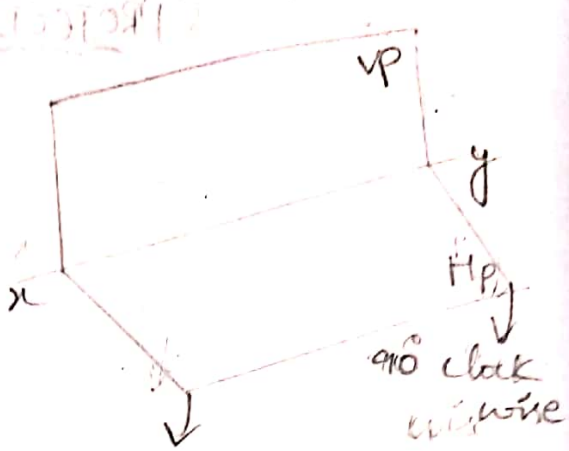
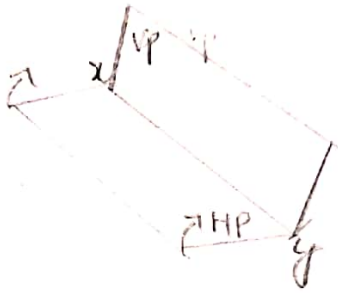
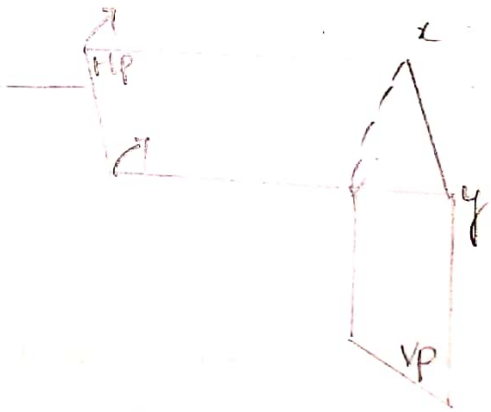
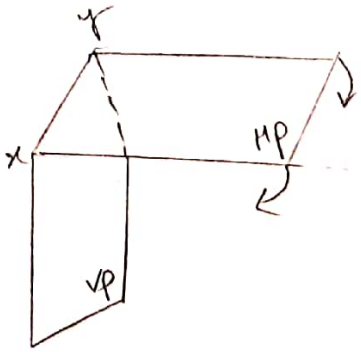


12-10-19

UNIT-2

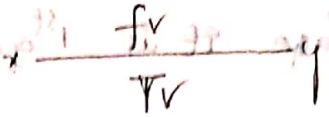
PROJECTION of POINTS



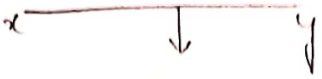
Quadrant	Condition	Pictorial Position
I Q	Above HP Infront of VP	
II Q	Above HP behind of HP	
III Q	below HP behind of VP	
IV Q	below HP Infront of VP	

Position

Above HP



Infront of vp

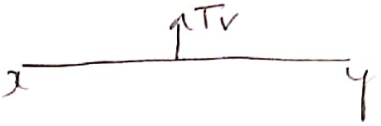


Above HP ---- a', b', c' - - - z' ; [f.v]

Infront of vp - - - a, b, c - - - z ; [T.v]

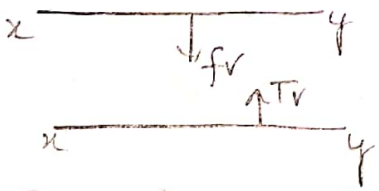
Above HP [fv]

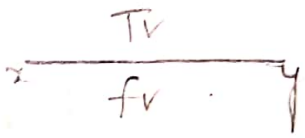
Behind of vp [T.v]



Below HP

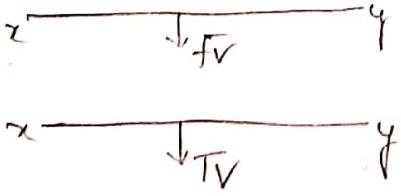
behind of vp

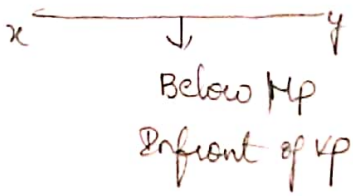




Below HP

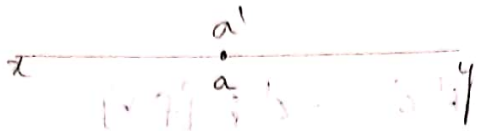
Infront of vp



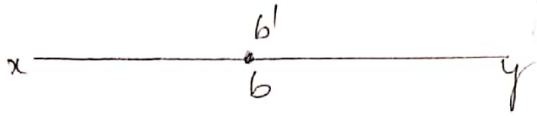


Qv

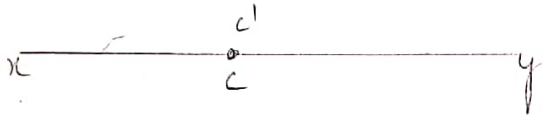
1, A point 'A' is lies in between the horizontal plane and vertical plane it is 1st qv. Draw the projections.



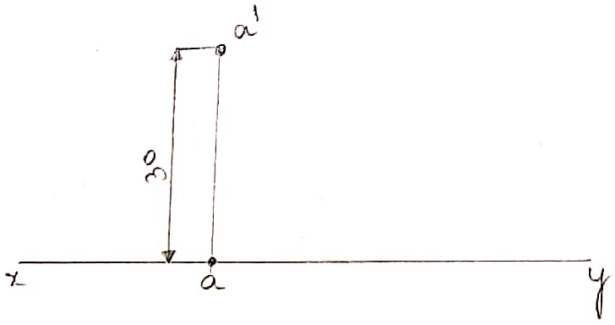
2, A point 'B' is touches to both horizontal and vertical plane. Draw the projections.



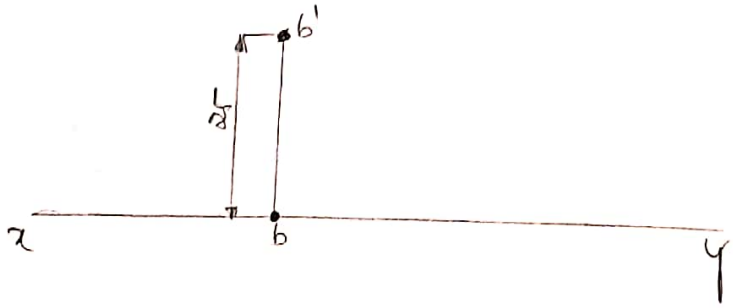
3, A point 'c' is on the reference line. Draw qv



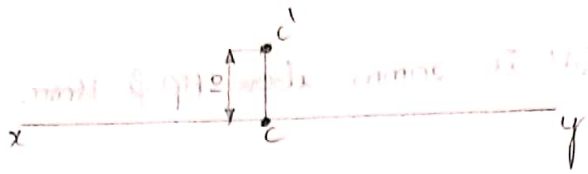
4, A point 'A' is 30mm above HP



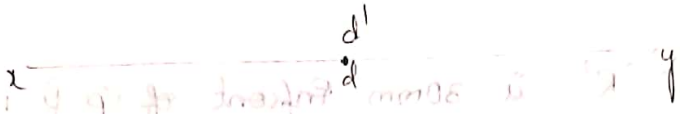
5, A point 'B' is 25mm above HP



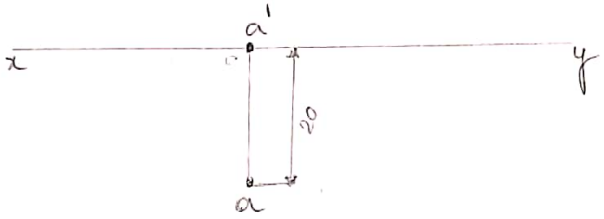
6, A point 'C' is 10mm above Hp



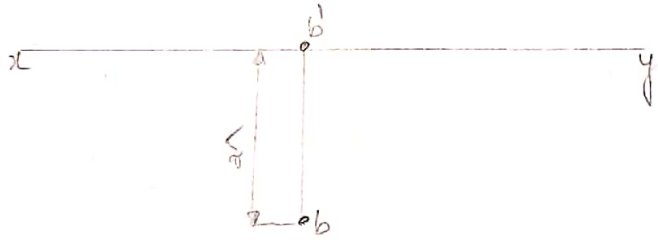
7, A point 'D' is touches to both planes.



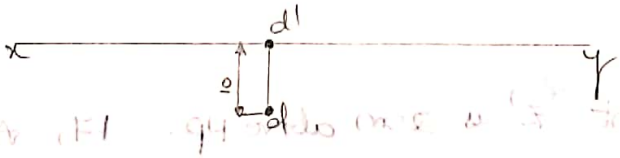
8, A point 'A' is 20 mm infront of Vp



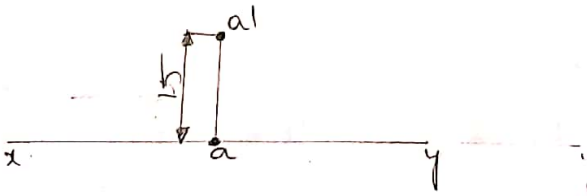
9, A point 'B' is 25mm infront of Vp is lies in Hp



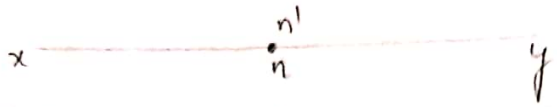
10, A point 'D' is 10 mm infront of Vp



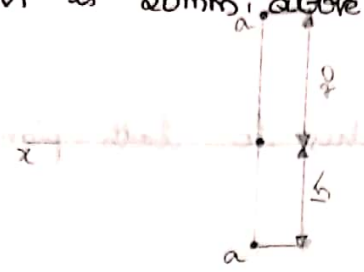
11, A point 'A' is 15mm above Hp.



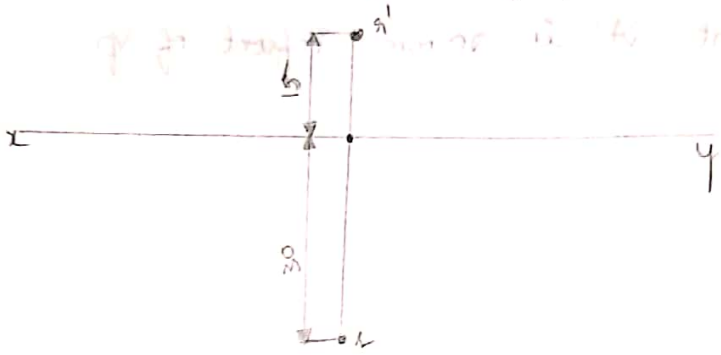
12, A point 'N' is touches to both Hp and Vp.



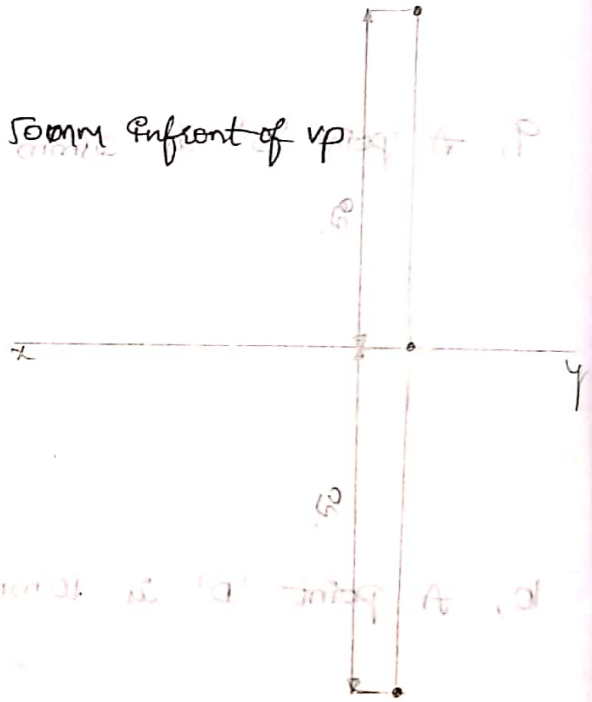
13, A point 'A' is 20mm above Hp & 15mm infront of Vp



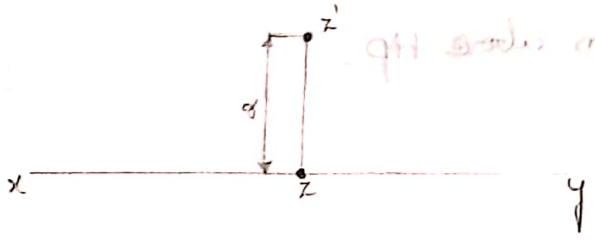
14, A point 'R' is 30mm infront of Vp & 15mm above Hp

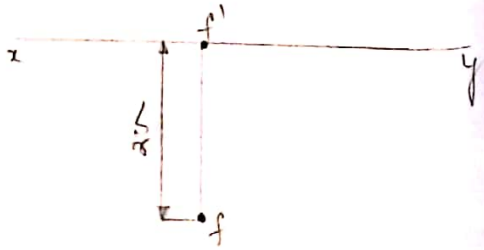


15, A point 'N' is 50mm Hp & 50mm infront of Vp



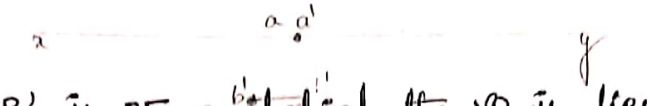
16, A point 'Z' is 2cm above Hp. 17, A point 'f' is 2.5cm infront of Vp.



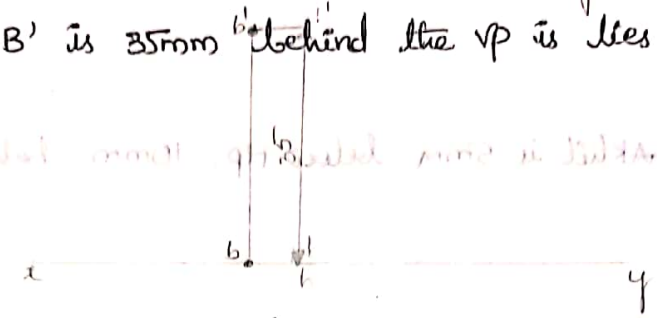


Qv

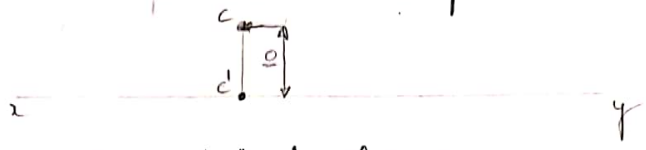
18, A point 'A' is touches to both planes. Draw the projections in Qy



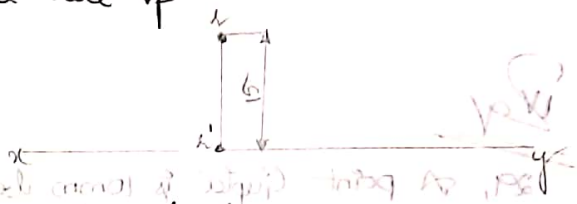
19, A point 'B' is 35mm behind the vp is lies on Hp



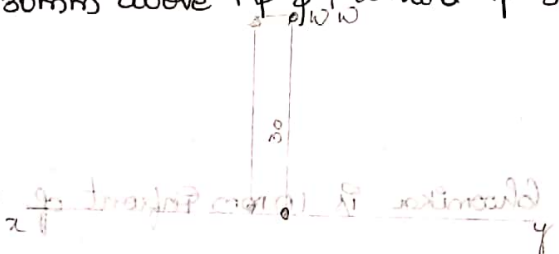
20, A point 'C' is 10mm behind the vp



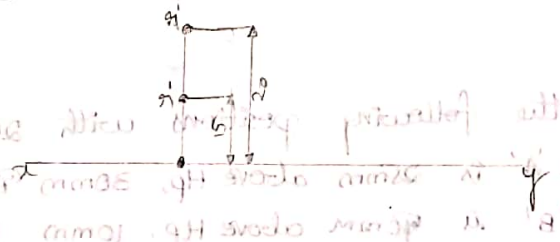
21, A point 'R' is 15mm behind the vp



22, A point 'W' is 30mm above Hp & behind vp 30mm

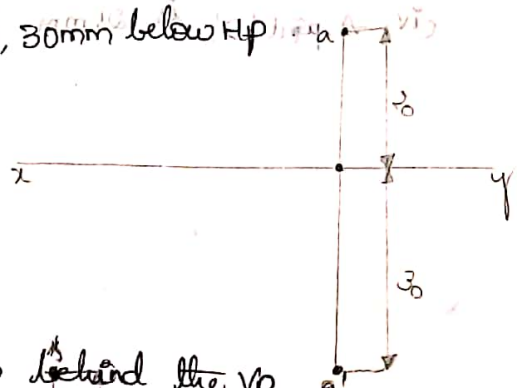


23, A point 'R' is 20mm behind vp & 25mm above Hp

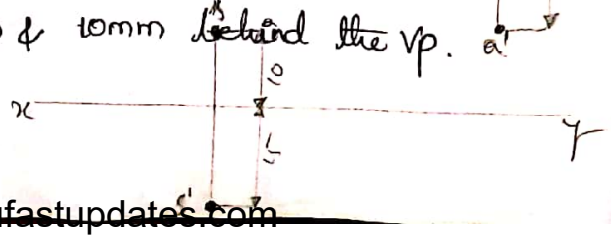


Qvi

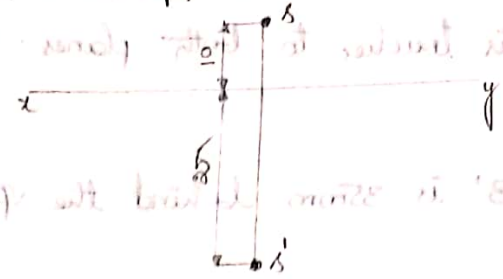
24, A point 'A' is 20mm behind the vp, 30mm below Hp



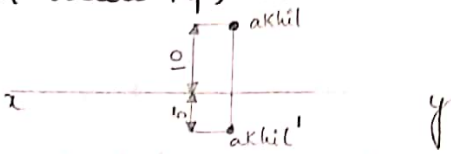
25, A point 'E' is 15mm below Hp & 10mm behind the vp.



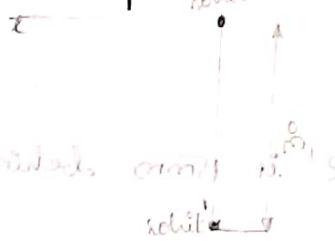
26, A point 'S' is 25mm below Hp, 10mm behind Vp.



27, A point Akhil is 5mm below Hp, 10mm behind Vp.

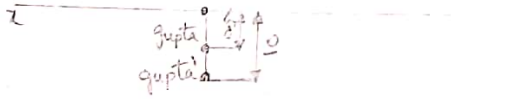


28, A point rohit is 30mm below Hp

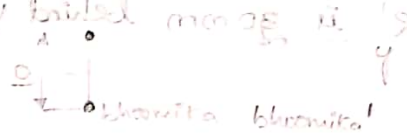


IV Qv

29, A point Gupta is 10mm below Hp, 0.5cm infront of Vp.



30, A point Bhoomika is 10mm infront of Vp, 10mm below Hp.



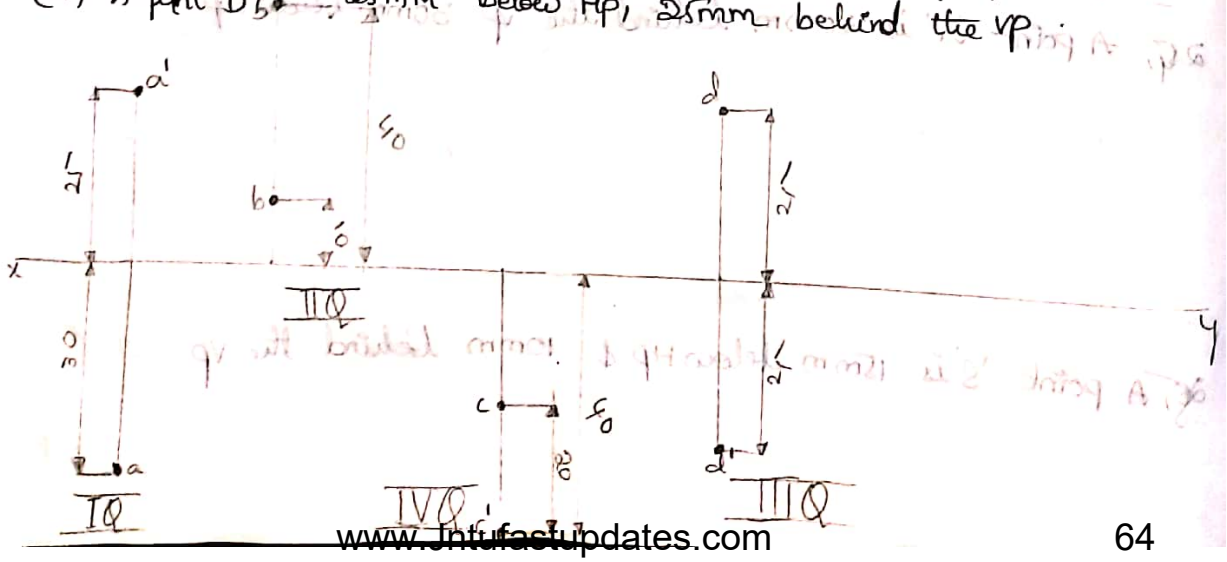
31, Draw the following positions with 20mm apart.

(i), A point 'A' is 25mm above Hp, 30mm infront of Vp.

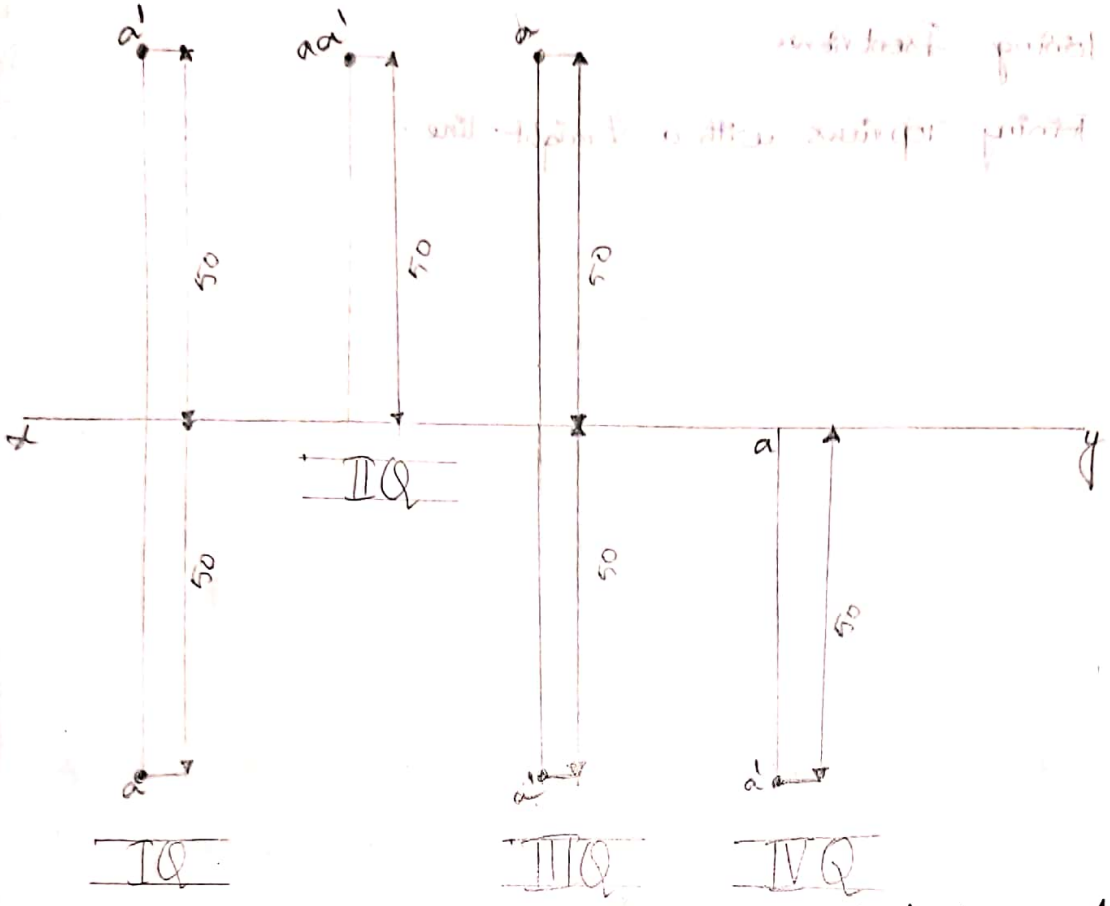
(ii), A point 'B' is 40mm above Hp, 10mm behind the Vp

(iii), A point 'C' is 40mm below Hp, 20mm infront of Vp

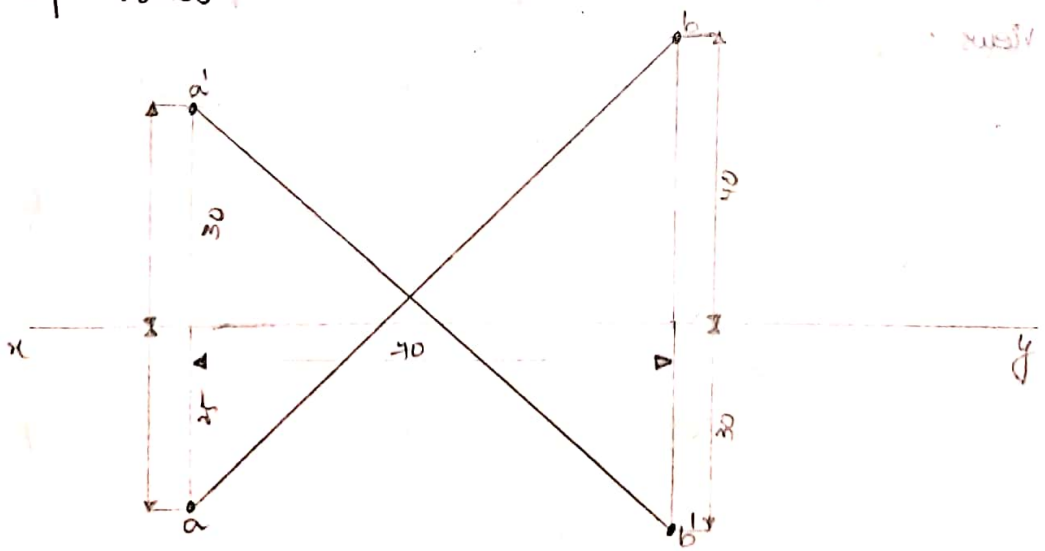
(iv), A point 'D' is 25mm below Hp, 25mm behind the Vp.



32) A point P is 50mm from the both reference planes. Draw the position of Views in all possible quadrants.



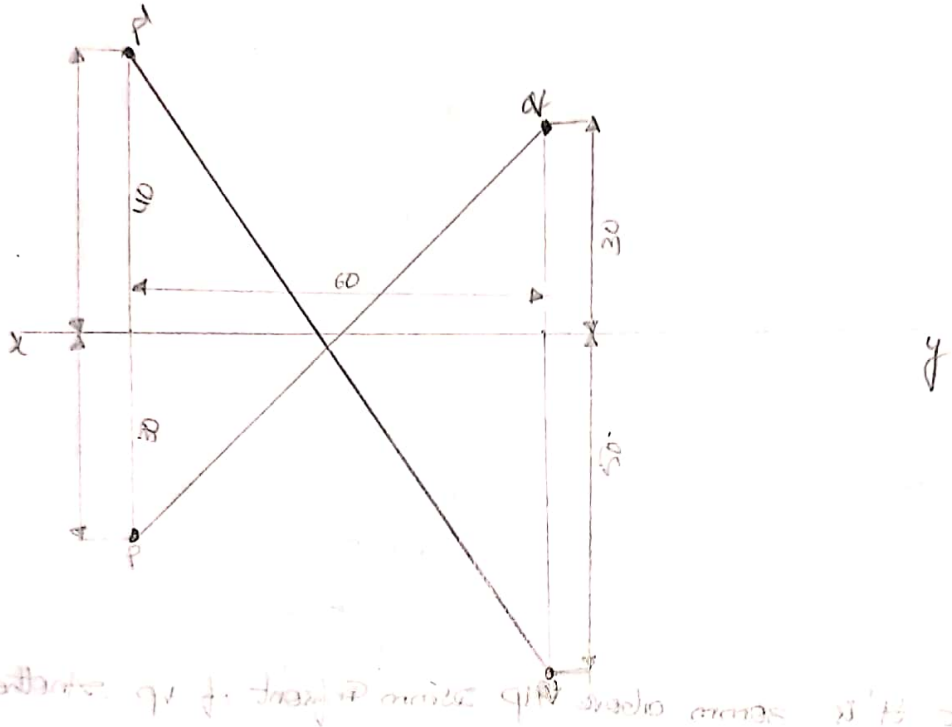
33) A point A' is 30mm above HP 25mm infront of VP. Another point 'B' is 30mm below HP, 40mm behind the VP. The distance between 2 projectors are 70mm apart. Joining their front and top views.



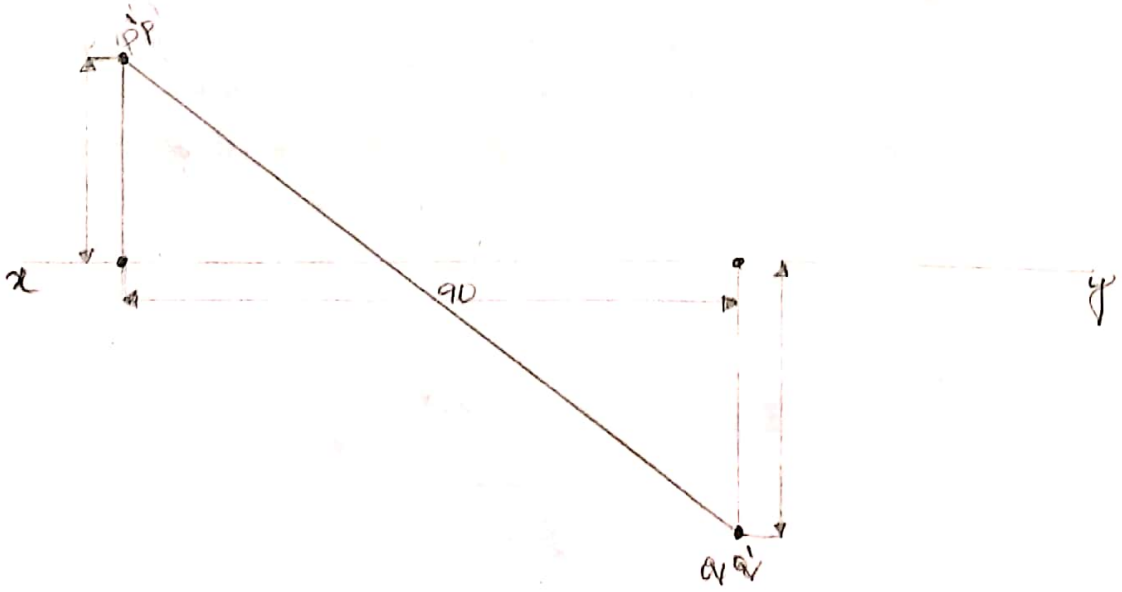
34. A point 'P' is 40mm above HP and 30mm infront VP. Another point Q is 50 MM below HP and 30MM behind VP. And the distance between 2 projectors are 60MM apart

1, Joining Frontviews

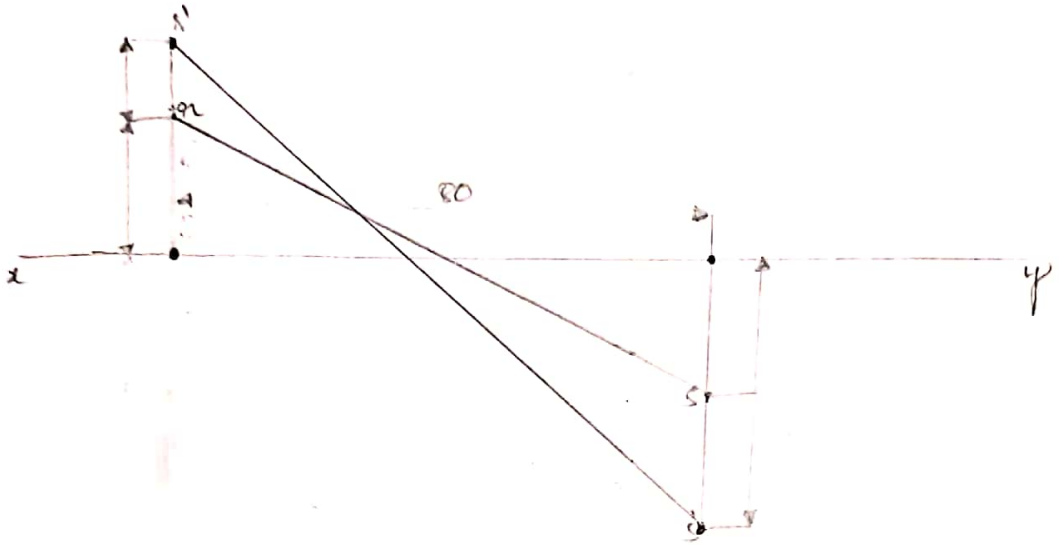
2, Joining Top views with a Straight line.



35, A point P is 30mm above HP and also behind VP. Another point Q is 40mm below HP and also infront of VP. And the distance between 2 projectors are 90mm apart. Joining front and top views.



36) A point P' is 30mm above HP, 20mm behind VP. Another point Q' is 40mm below HP, 20mm infront of VP. The distance b/w two projectors are 80mm apart. Joining their front and top views.



37) Draw the projections of given below 40mm apart.

I, Point A is 30mm above HP 25mm behind the VP.

II, Point B is 45mm below HP 10mm behind the VP

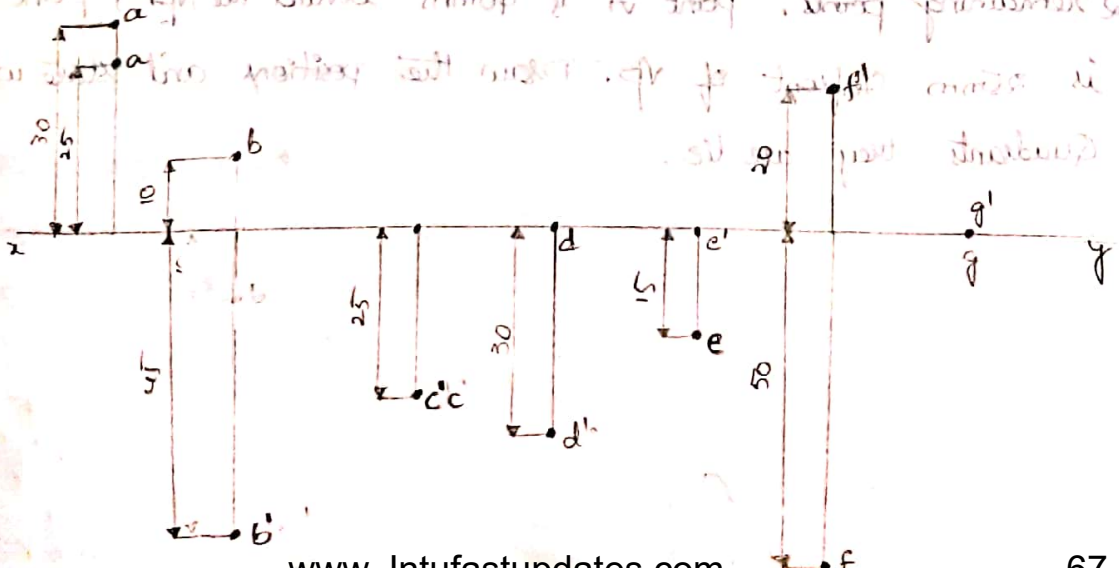
III point C is 25mm below HP and also infront of VP

IV point D is 30mm below HP

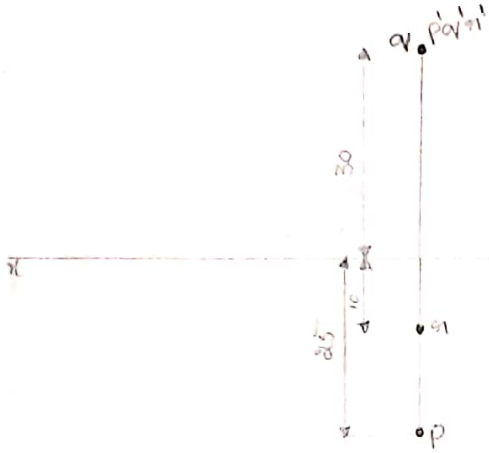
V point E is 15mm infront of VP

VI point F is 20mm above HP, 50mm infront of VP

VII point G is lies in 1st quadrant it touches to both reference Plane.

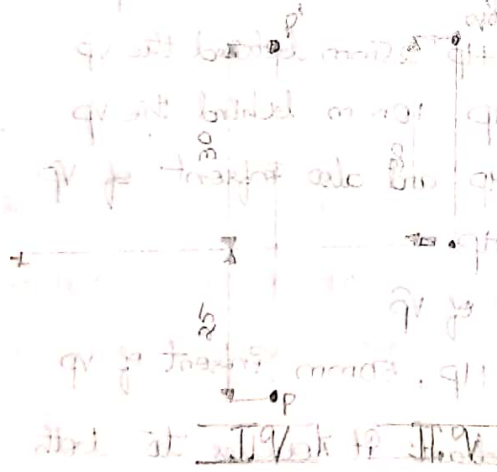


38, A point is 30mm above the xy line. It is front view for remaining 3 points. Point 'P' is 25mm infront of vp, point 'Q' is 30mm behind the vp. and point 'R' is 10mm infront of vp. Draw the positions and state which Quadrants they are lie.



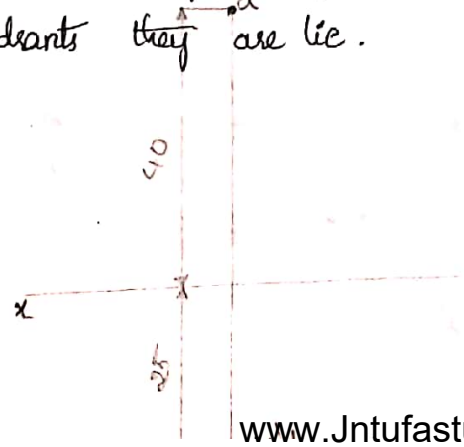
P - I Q
Q - II Q
R - I Q

(or)



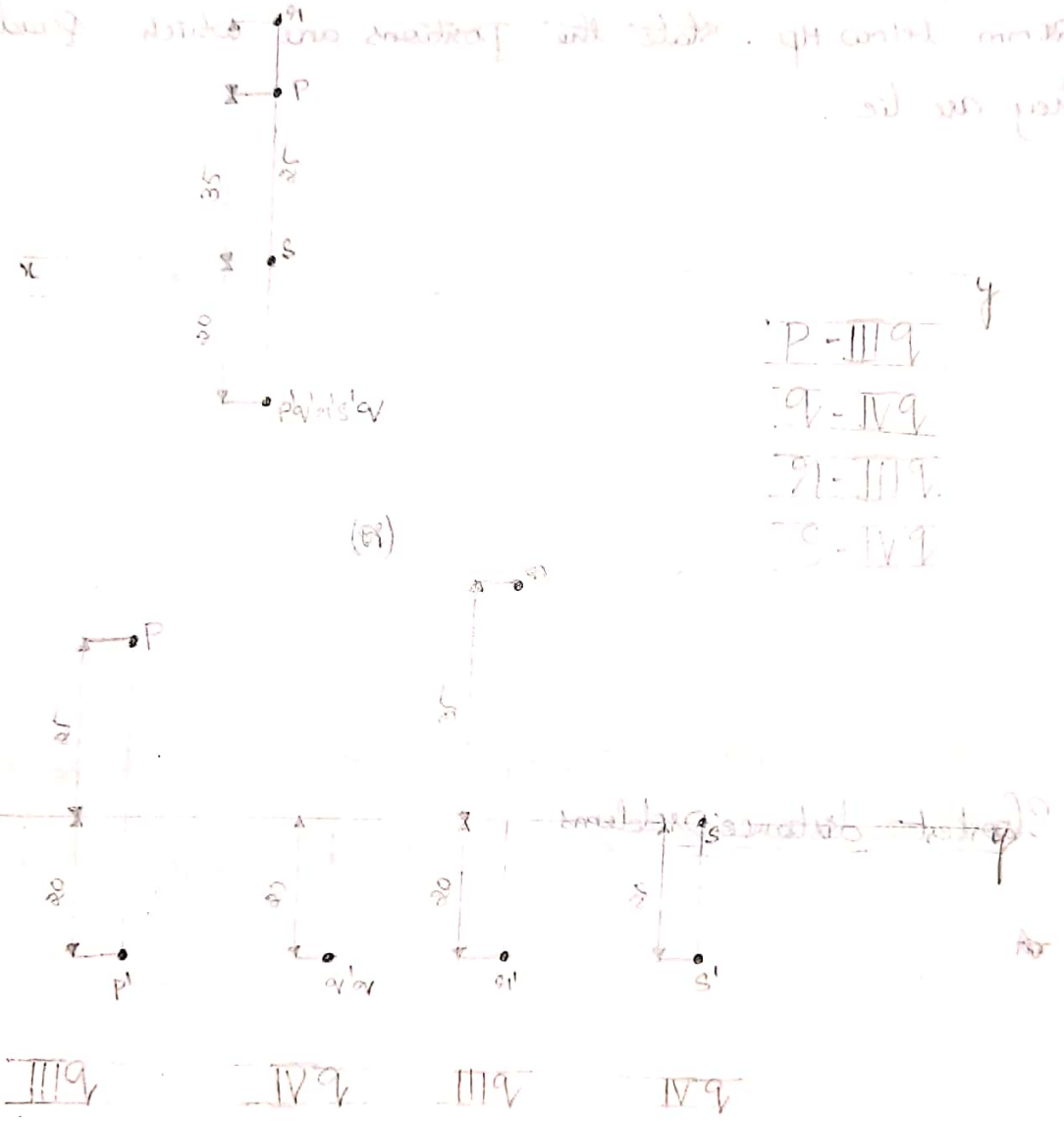
I V Q, II Q, I Q

39, A point is 25mm below the xy line It is front view for 2 remaining points. point 'A' is 40mm behind the vp, point 'B' is 25mm infront of vp. Draw the positions and state which Quadrants they are lie.

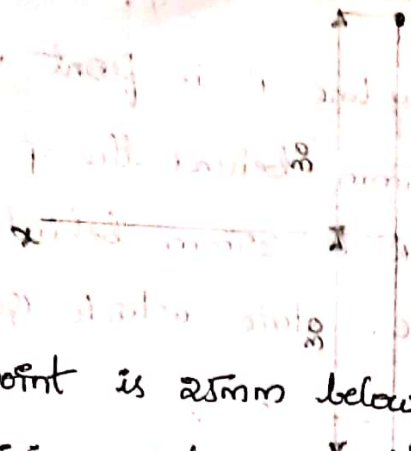


A - III Q
B - IV Q

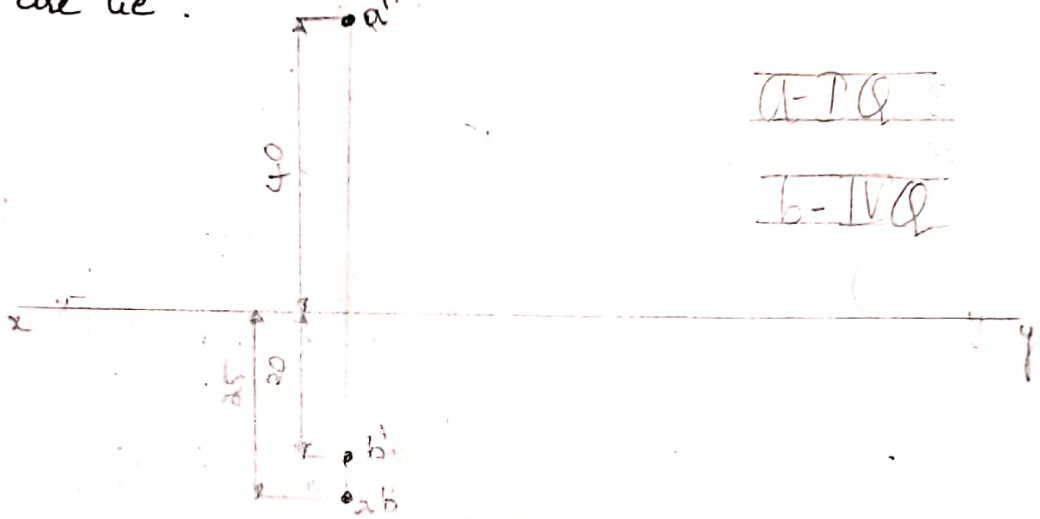
10) A point 'P' is 20mm below the xy line 'P' is front view for remaining 4 points. point 'P' is 25mm behind the VP, point 'Q' is 20mm infront of VP, point 'R' is 35mm behind the VP. Point 'S' is on the reference line. State which Quadrant they are lie of their positions.



11) A point is 30mm above the xy line 'P' is top view for remaining 2 points. point 'P' is 30mm below HP, point 'Q' is 30mm above HP. draw the positions and state which Quadrant they are lie.



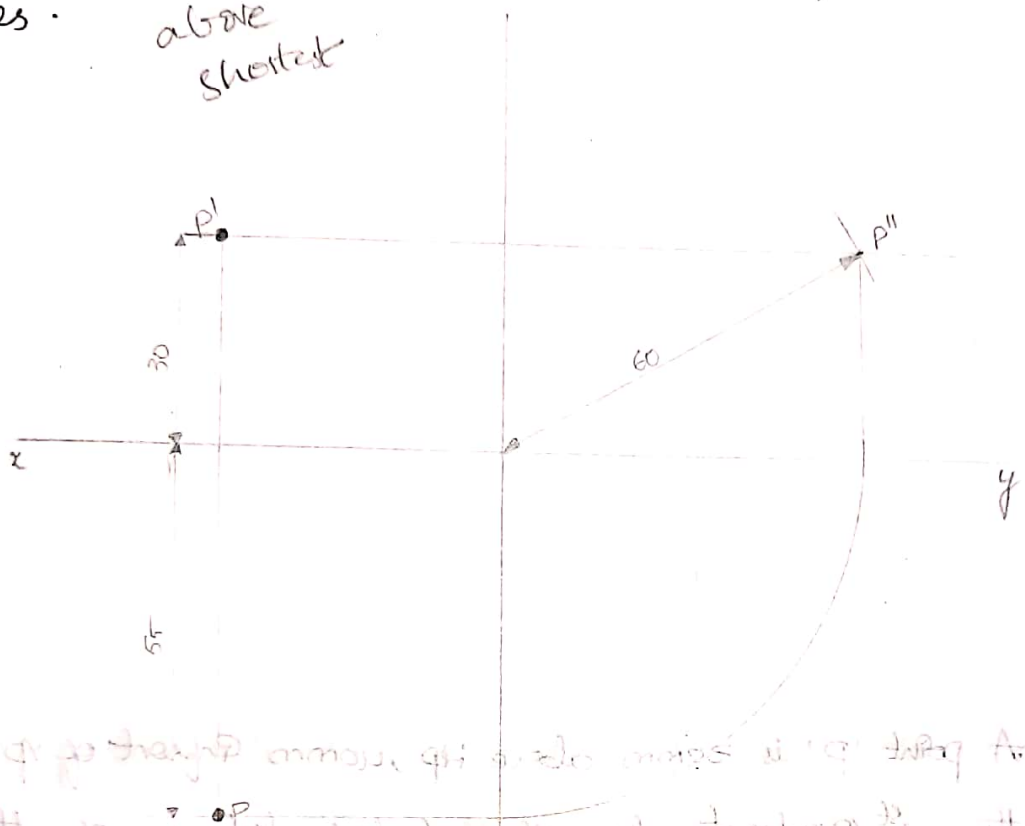
4) A point is 25mm below the xy line. It is top view for 2 remaining points. Point 'A' is 40mm above Hp, point 'B' is 20mm below Hp. State the positions and which quadrant they are lie.



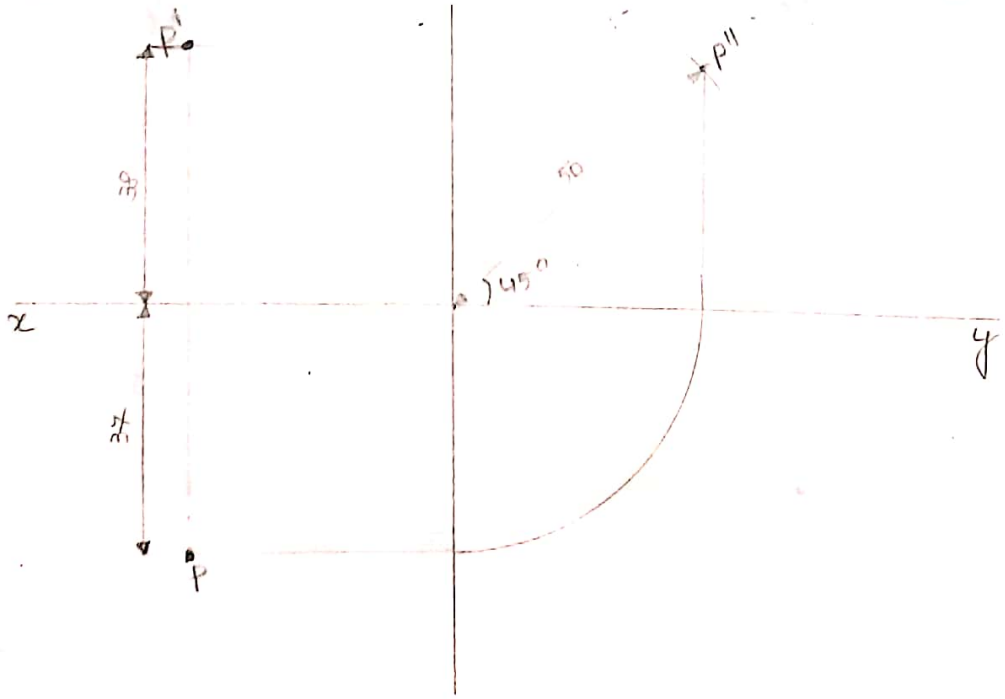
Shortest distance problems

Shortest distance Problems

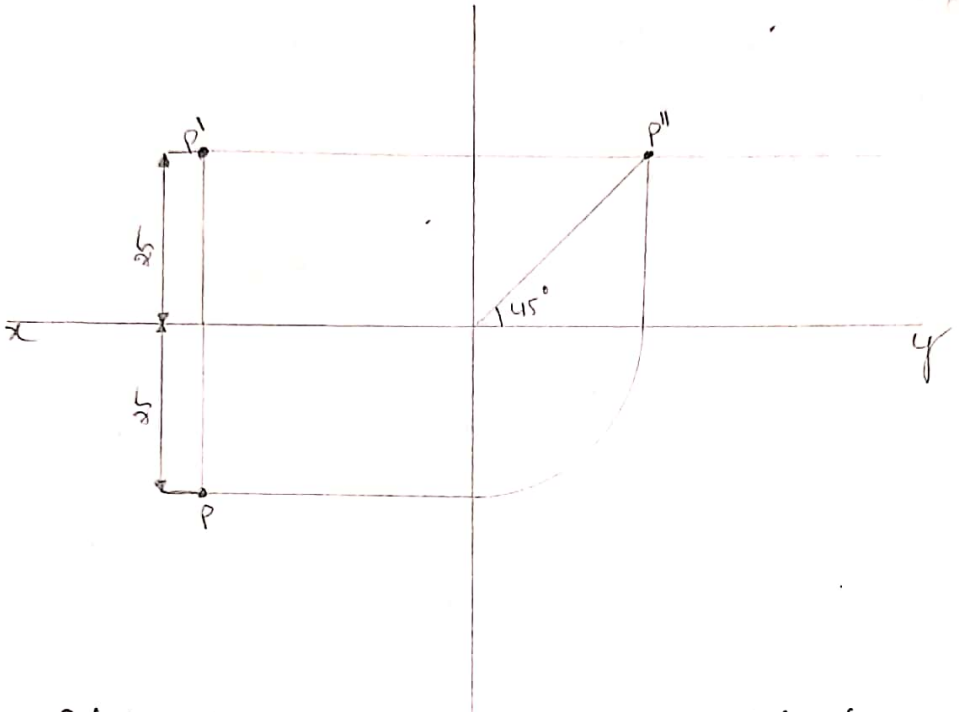
1, A point P is 30mm above HP is in the 1st quadrant. Draw the shortest distance is 50mm from the origin of principle planes.



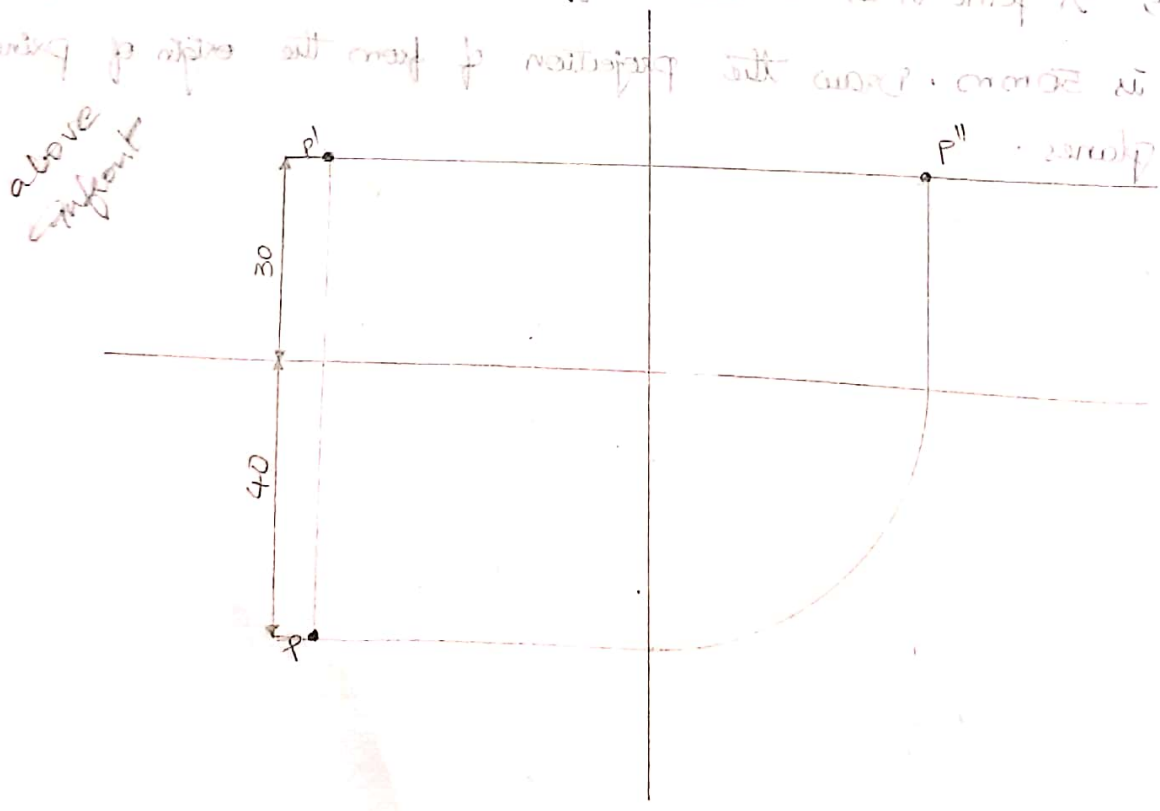
2, A point A is in the 1st quadrant the shortest distance of 'A' is 50mm. Draw the projection of from the origin of principle planes.



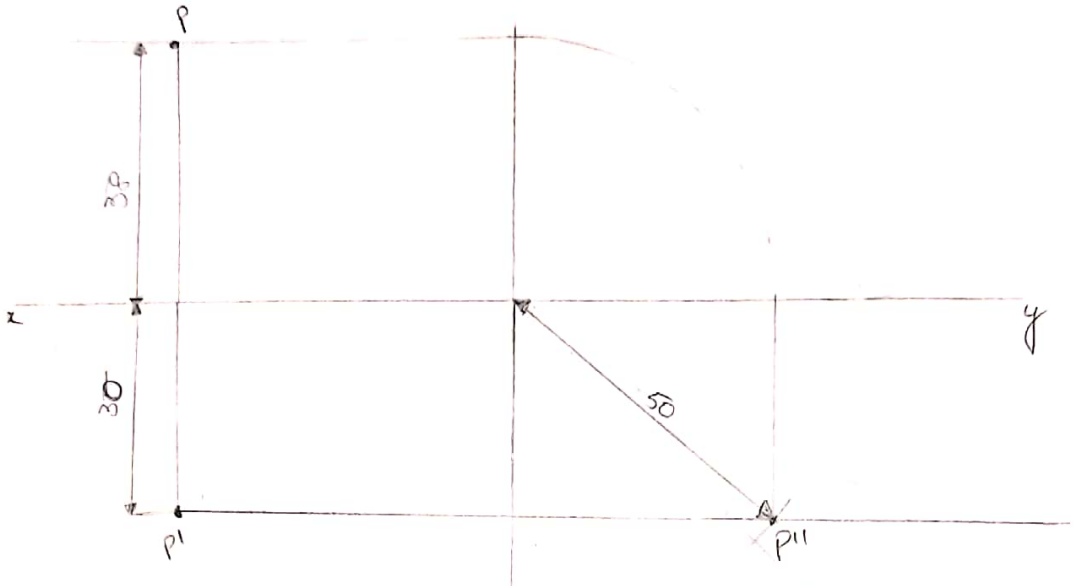
3, A point A is 25mm above HP is in the 1st quadrant. Draw the shortest distance of their projections from the Principle planes.



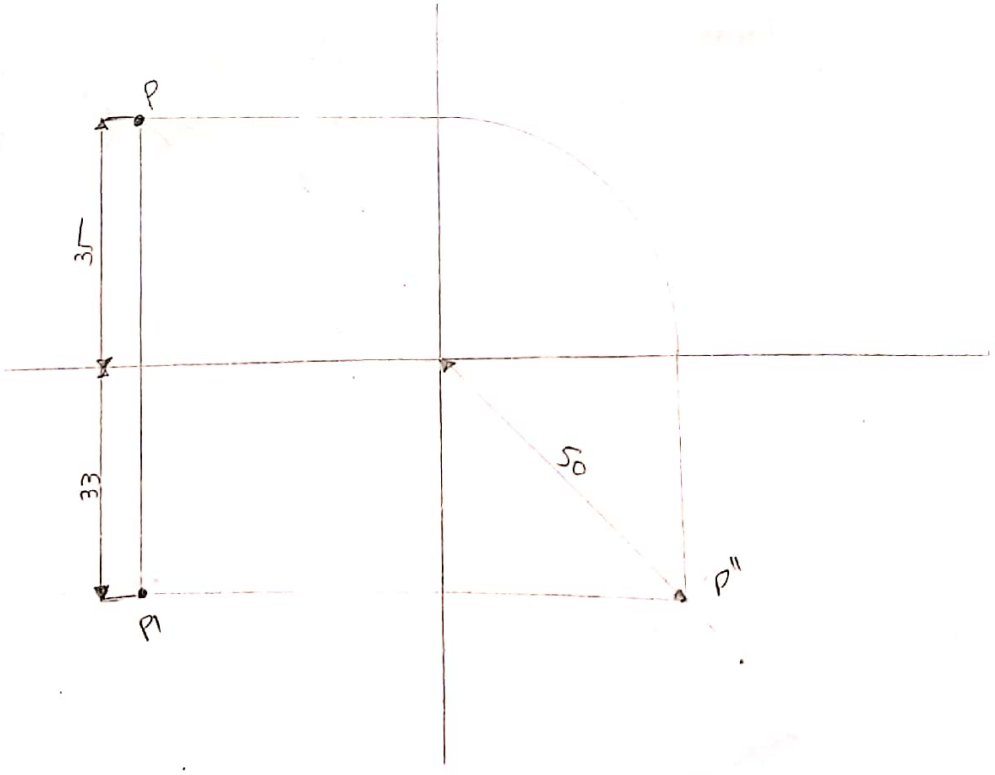
4, A point 'P' is 30mm above HP, 40mm infront of VP is in the 1st quadrant draw the shortest distance of their Principle Views from the origin of two planes.



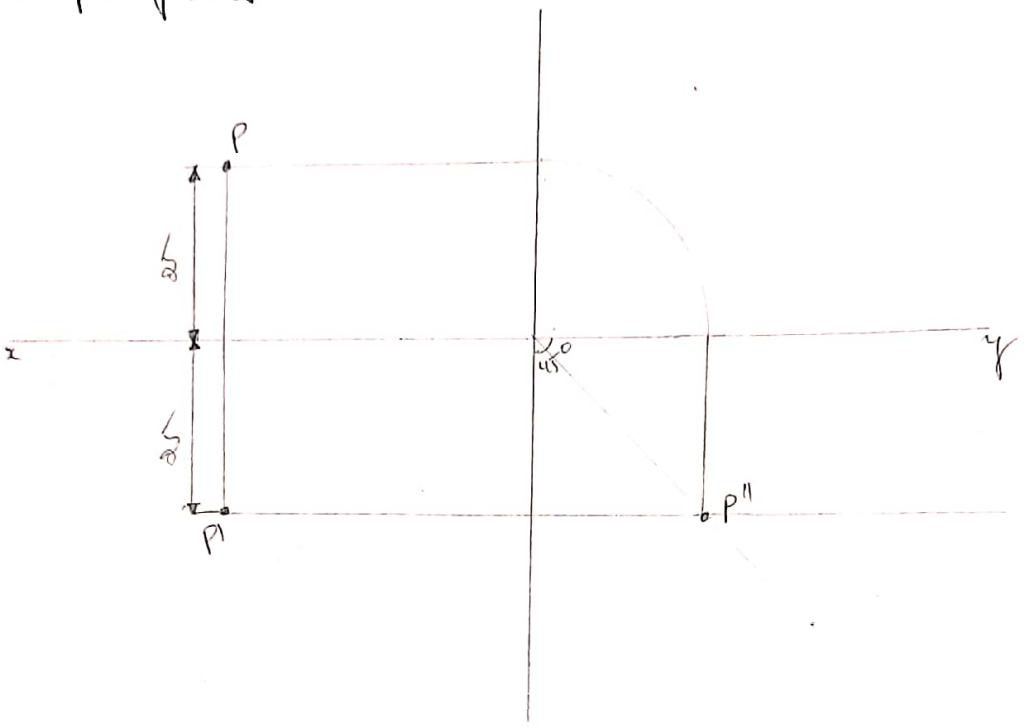
5, A point P is 30mm below HP is in the IIIrd quadrant. Draw the shortest distance is 50mm from the origin of Principle planes.



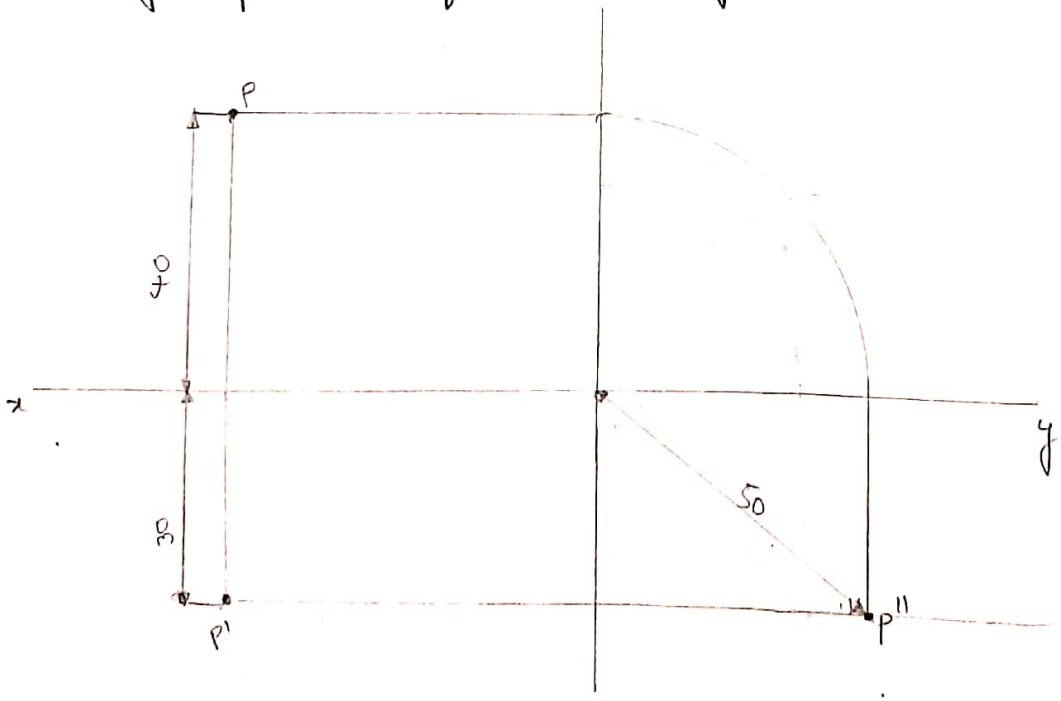
6, A point 'A' is in the IIIrd quadrant. The shortest distance of 'A' is 50mm. Draw the projection of from the origin of principle planes.



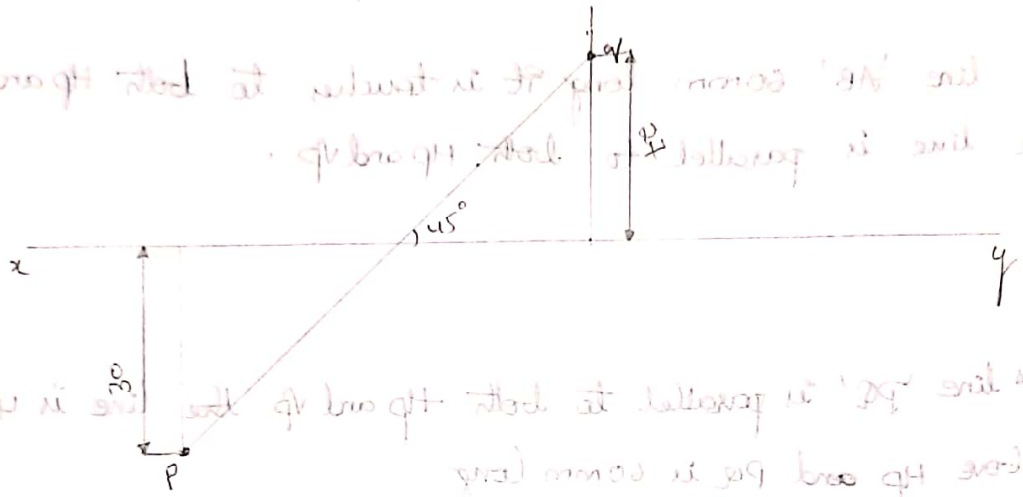
7) A point 'A' is 25mm below HP is in the IInd q/. Draw the shortest distance of their projections from the principle planes.



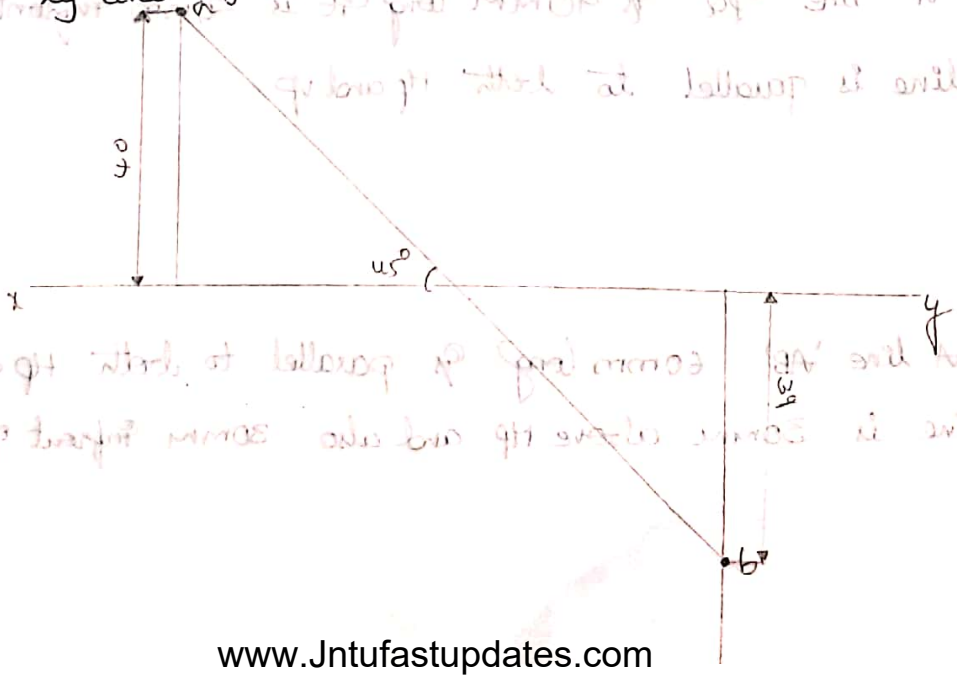
8, A point 'P' is 30mm below HP, 40mm behind of VP is in the IIIrd quadrant. Draw the shortest distance of their principle views from the origin of two planes.



9, A point P is 30mm infront of VP another point Q is behind the VP. the distance between two projectors are 60mm. find out the point Q. Joining a line with 45° inclination from P projection to Q.



10, A point is 40mm behind the VP another point B is 80mm infront of VP. the distance between two projectors are apart and for the A and B with 45° inclination straight line to the xy line. find out the another point distance.

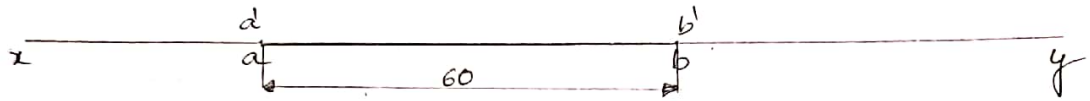


Straight Lines - 1

Line parallel to both Hp and Vp :-

1) A line 'AB' 80mm long & it is parallel to both Hp and Vp and the line is lying in between of both planes:

2, A line 'AB' 60mm long & is touches to both Hp and Vp. the line is parallel to both Hp and Vp.



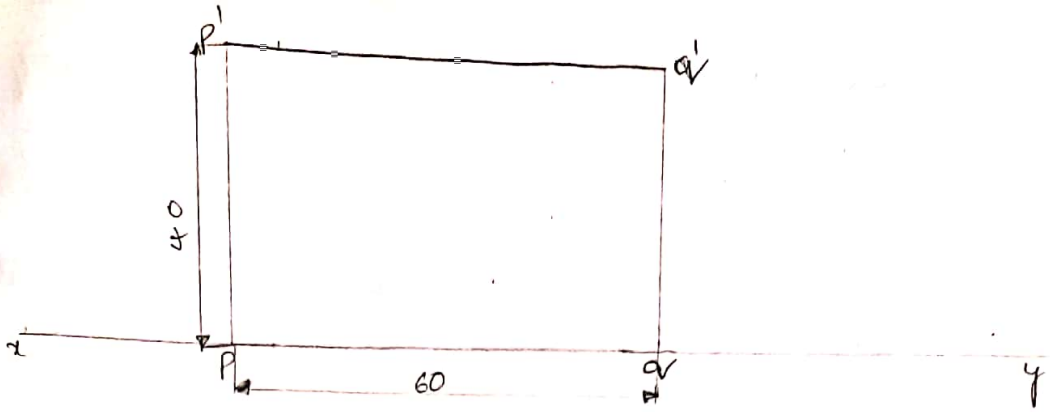
3, A line 'PQ' is parallel to both Hp and Vp the line is 40mm above Hp and PQ is 60mm long

4, A line 'CD' is 50MM long is 20mm infront of Vp. The line is parallel to both Hp and Vp.

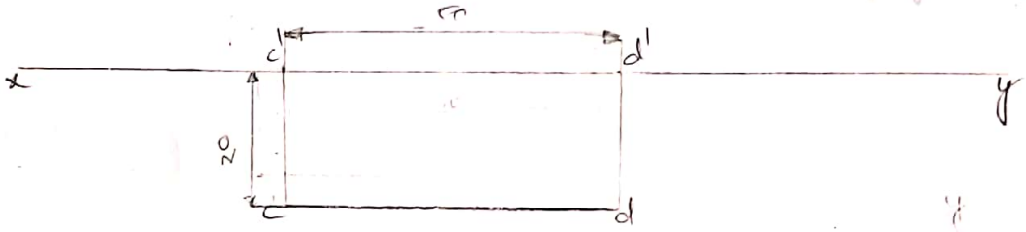
5, A line 'PQ' & 90mm long & is 50mm infront of Vp. line is parallel to both Hp and Vp

6, A line 'AB' 60mm long & is parallel to both Hp and Vp. The line is 30mm above Hp and also 30mm infront of Vp

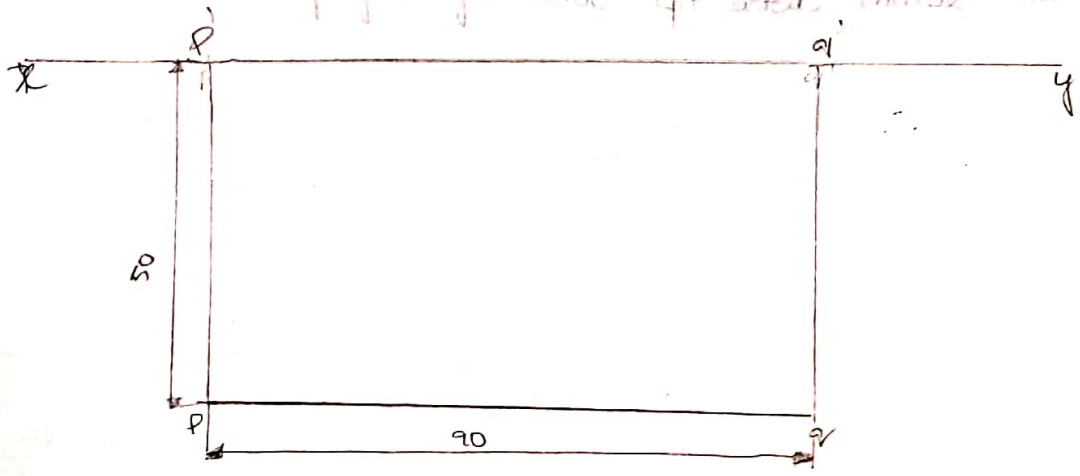
3A)



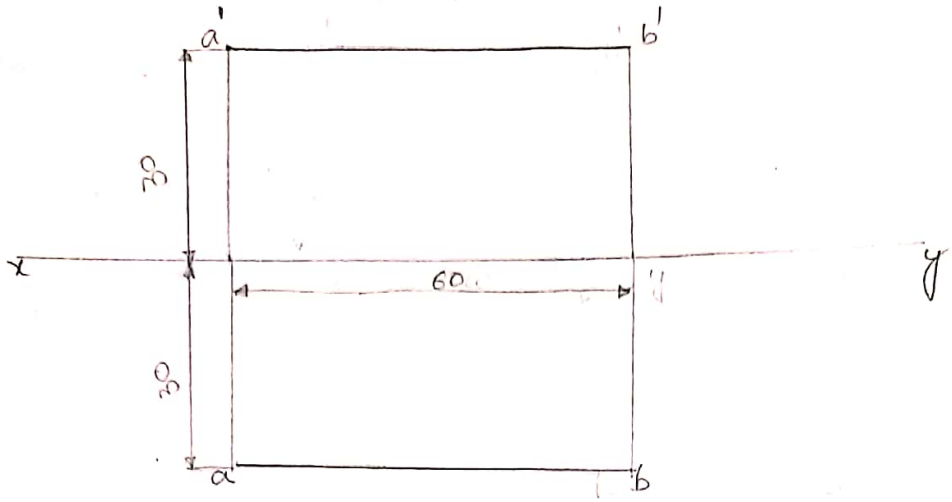
4A,



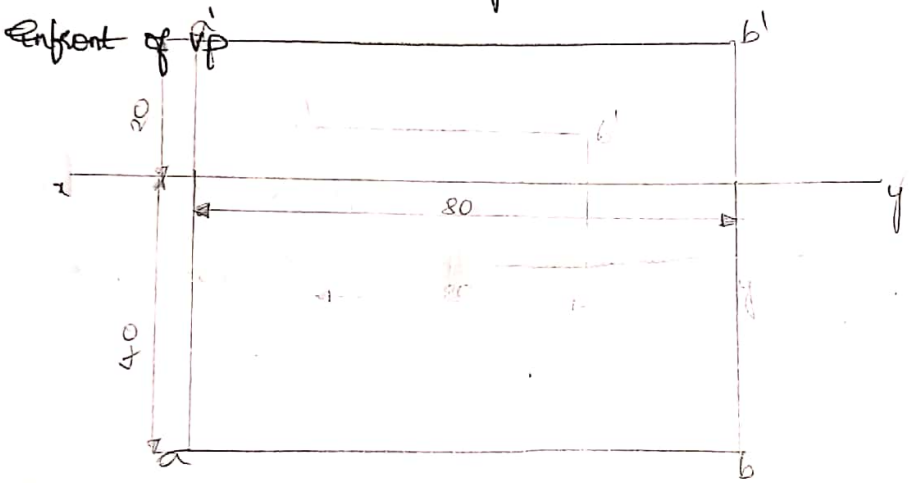
5A,



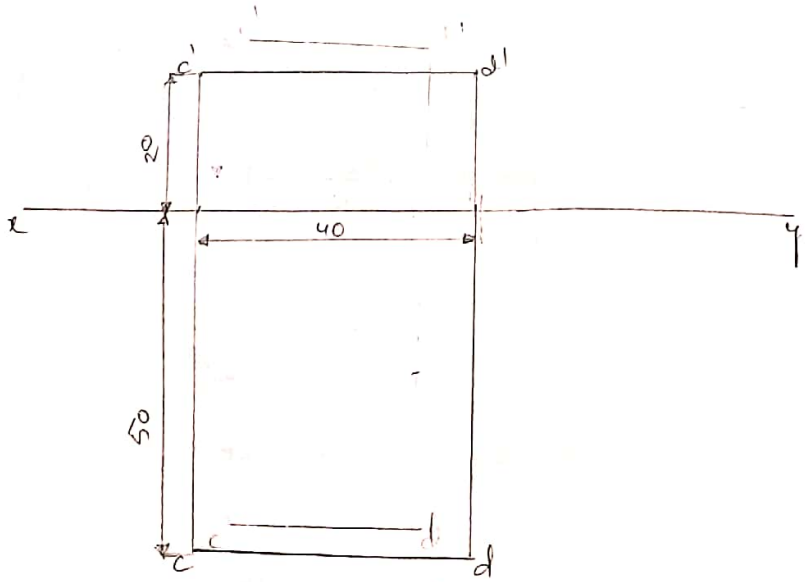
6A,



7, A line AB 80mm long is 20mm above HP, 40mm ~~also~~ infront of VP

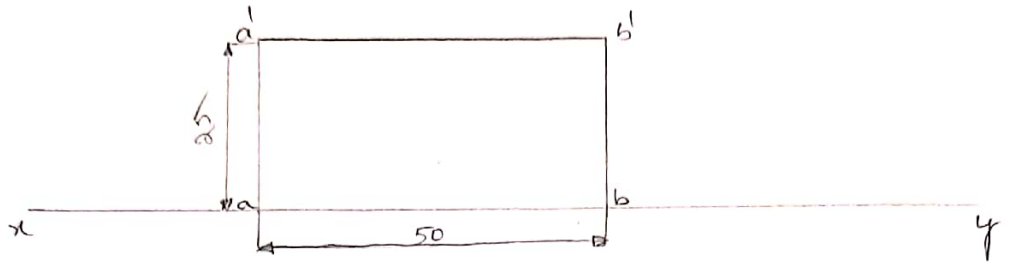


8, A line CD 40mm long is parallel to both HP and VP and the line is 20mm above HP 50mm infront of VP

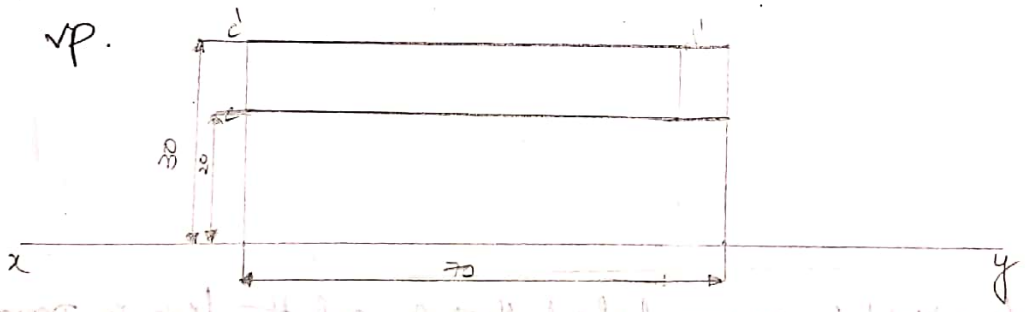


Line parallel to both Hp and vp - Dgv

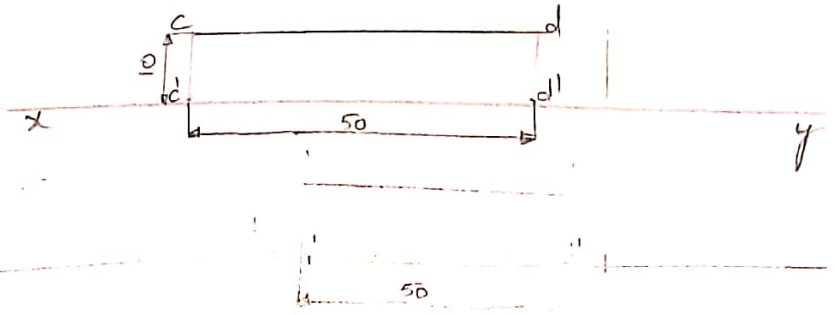
1, A line 'AB' 50mm long is parallel to both Hp and vp and the line is 25mm above Hp and also behind the vp



2, A line CD is 70mm long and the line is 30mm above Hp, 20mm behind the vp. Line is parallel to both Hp and vp.

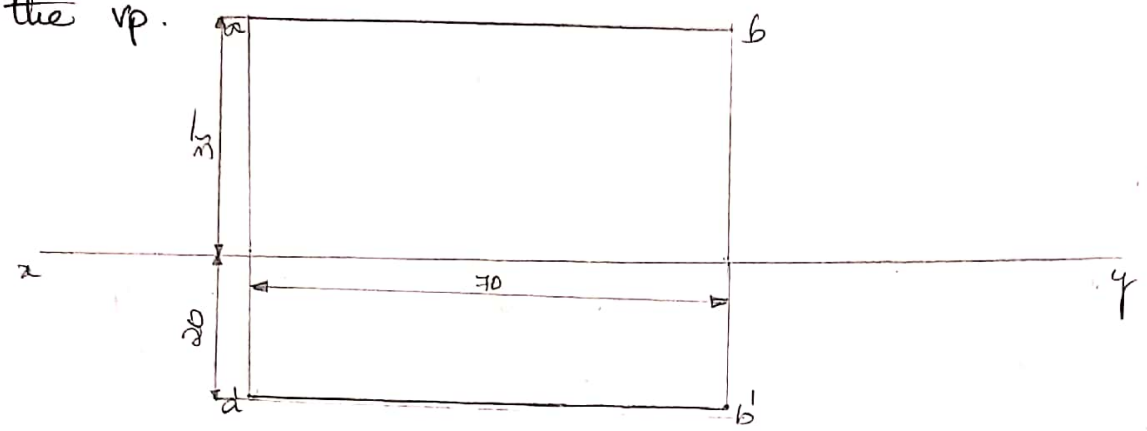


3, A line CD is 50mm long line parallel to both Hp and vp and also 10mm behind vp.

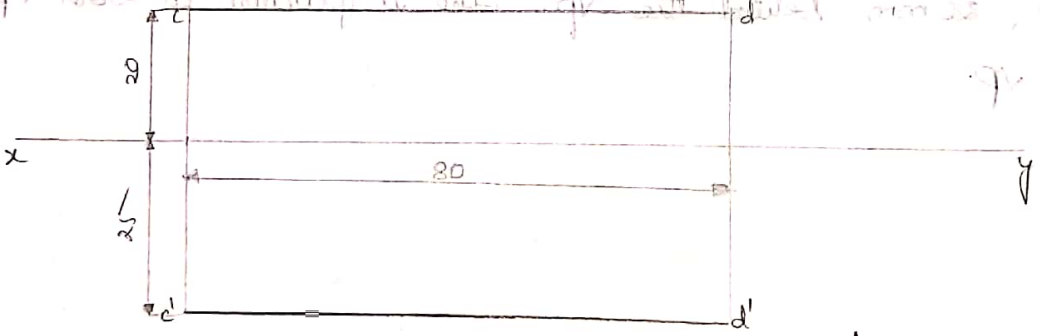


Line parallel to both HP and VP – Eg

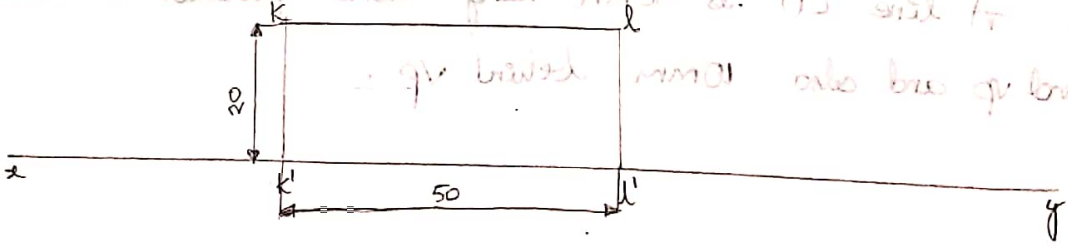
1, A line 'AB' 70mm long, it is parallel to both HP and VP and the line is 20mm below HP, 35 mm behind the VP.



2, A line 'CD' 80mm long it is parallel to both 25mm below HP, 20mm behind the VP.

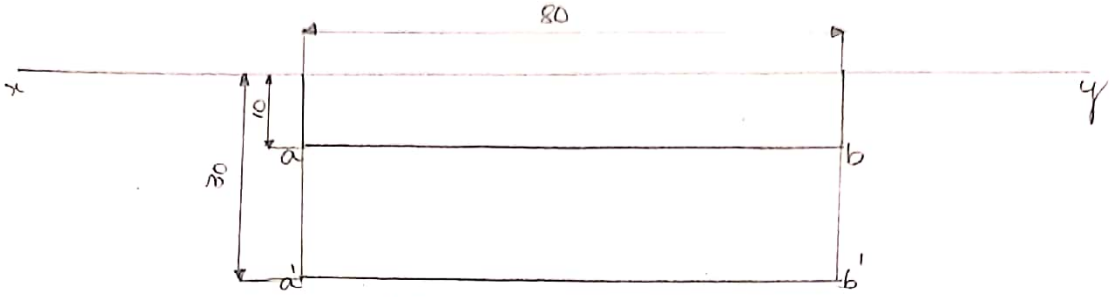


3, A line 'KL' is 20mm behind the VP and the line is parallel to both and 50mm long.

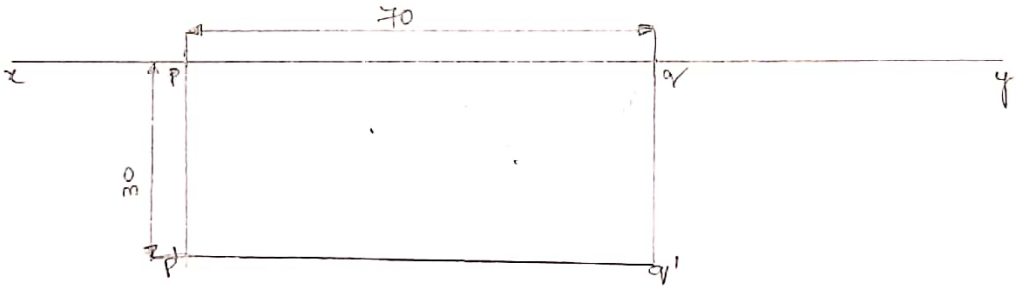


Line parallel to both Hp and Vp – IVQ

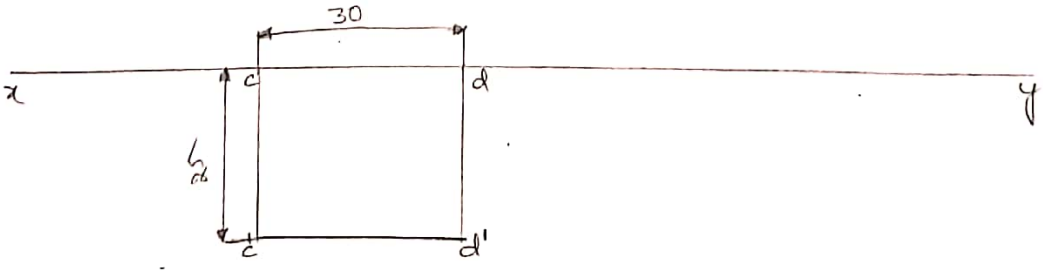
1, A line 'AB' 80mm long is 10mm infront of vp, 30mm below Hp



2, A line 'PQ' is 70mm long is parallel to both and 30mm below Hp and also infront of Vp

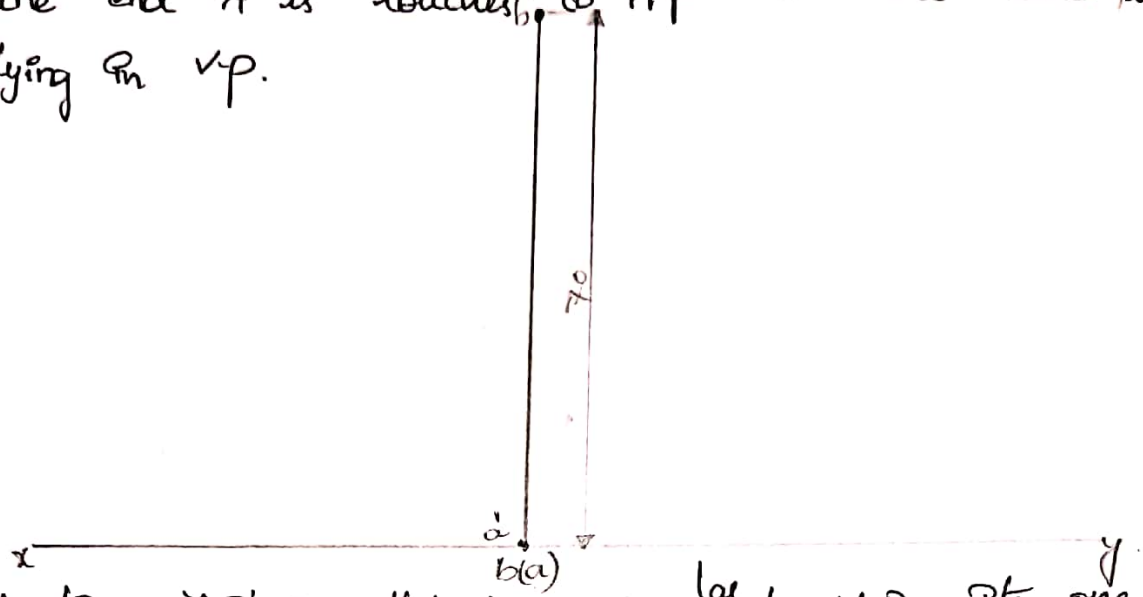


3, A line 'CD' 30mm long is 25mm below Hp.

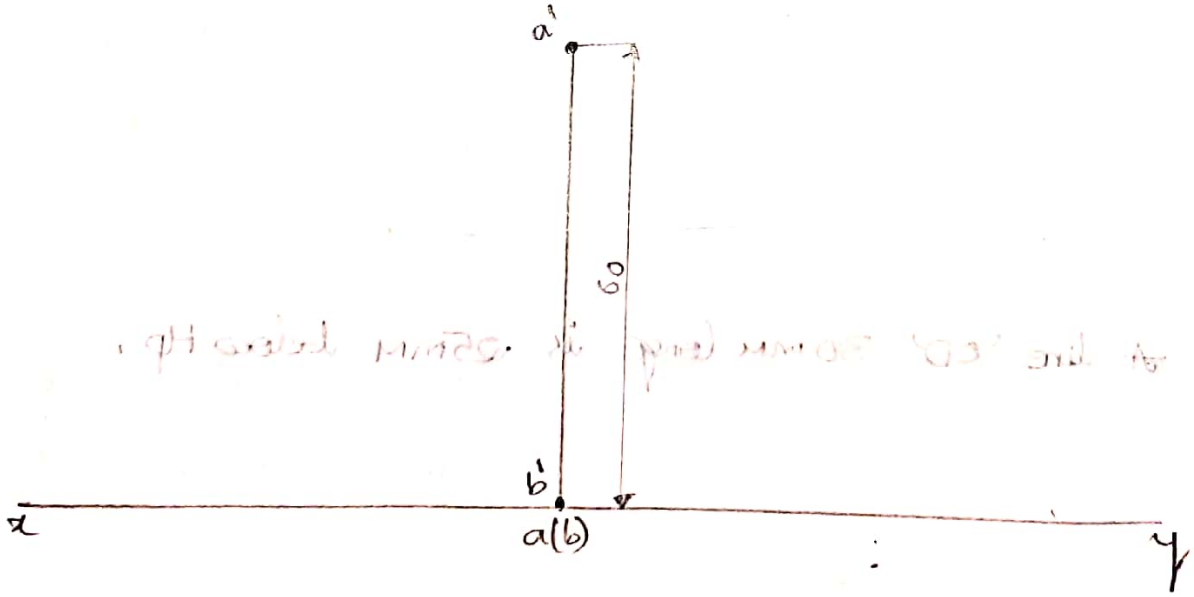


Line perpendicular to H.P and Parallel to V.P :-

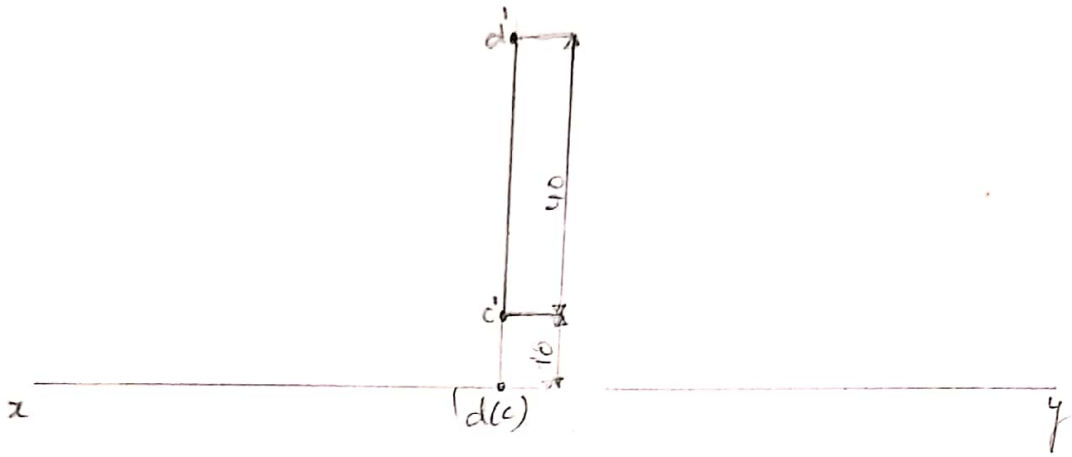
1, A line 'AB' is 70mm long. It is $\perp^{lar}$ to H.P and $\parallel^{el}$ to the line and A is touches to H.P and the line is ~~lies~~ lying on V.P.



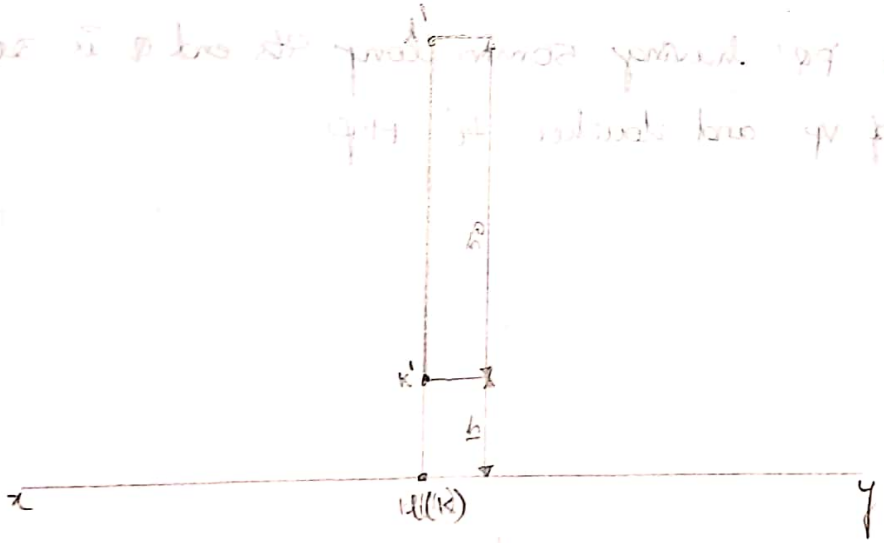
2, A line 'AB' parallel to VP, $\perp^{lar}$ to H.P. Its one of the end B is touches to ground. Draw the projection. The line is 60 mm long.



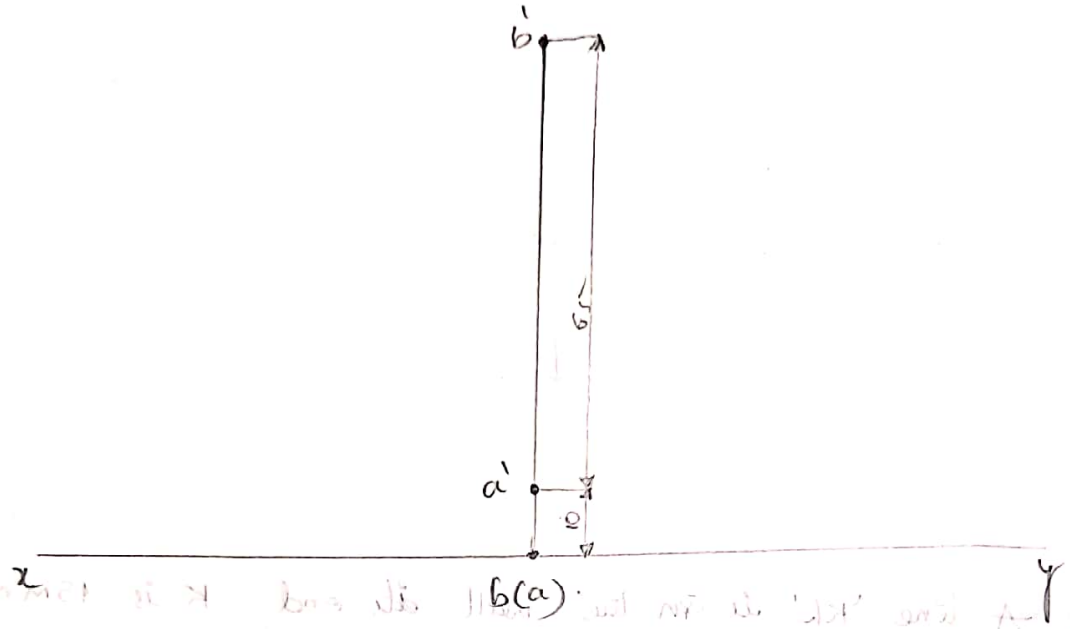
3, A line CD 40 mm long its end 'c' is 10mm above HP and the line is lying on VP ⊥ar to the H.P



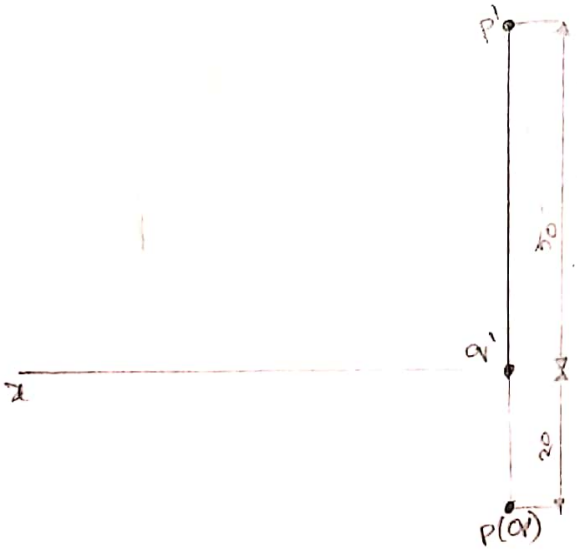
4, A line 'Kh' is on the wall its end K is 15mm above H.P and the line is ⊥ar to H.P 50mm long,



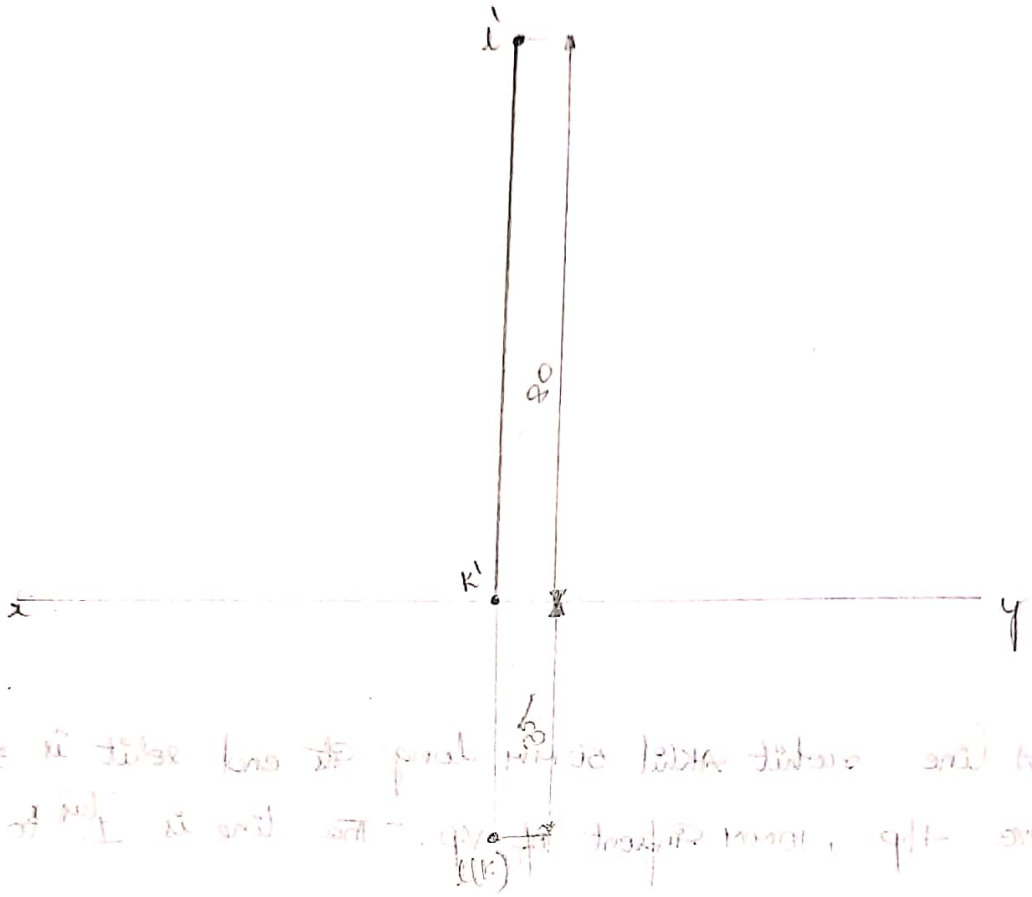
5) A line 'AB' 65mm long ⊥ar to H.P, ∥el to VP. one of the end 'A' is 10mm above H.P.



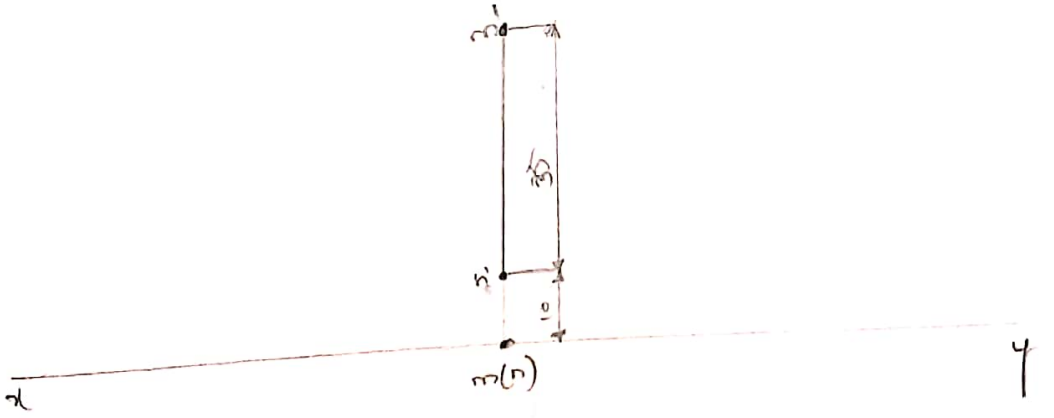
6) A line 'PQ' having 50mm long its end Q is 20mm infront of VP and touches to H.P



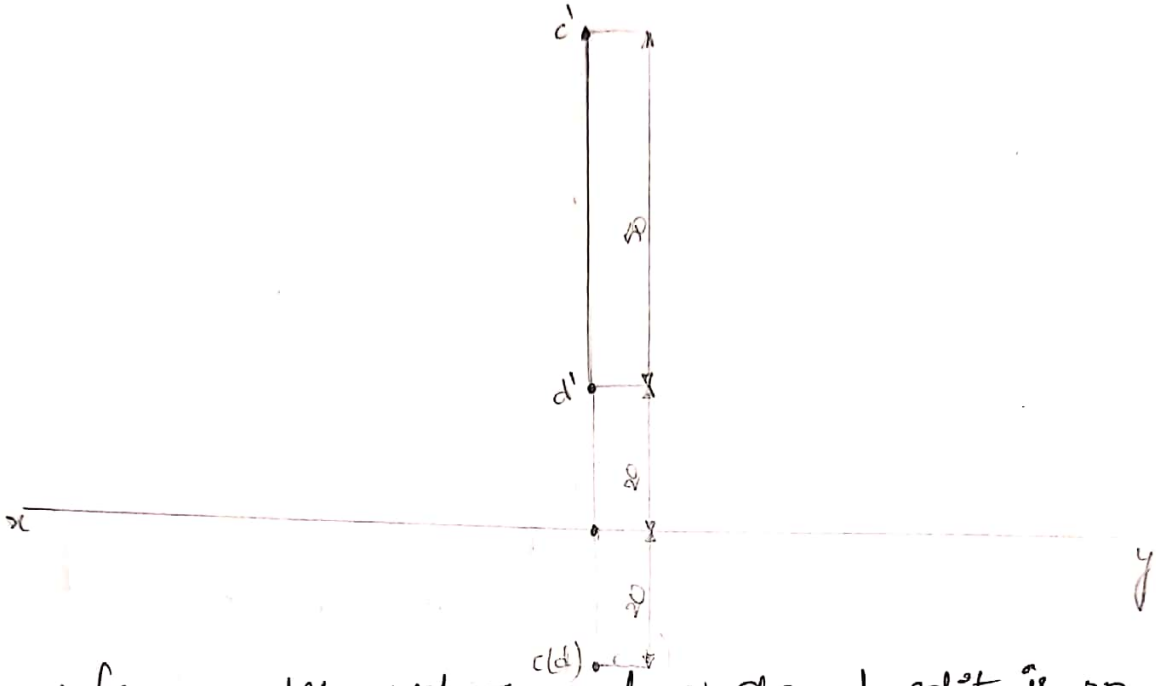
7, A line 80mm long ⫫ end K is 35mm infront of Vp and the line is ⊥ar to H.P.



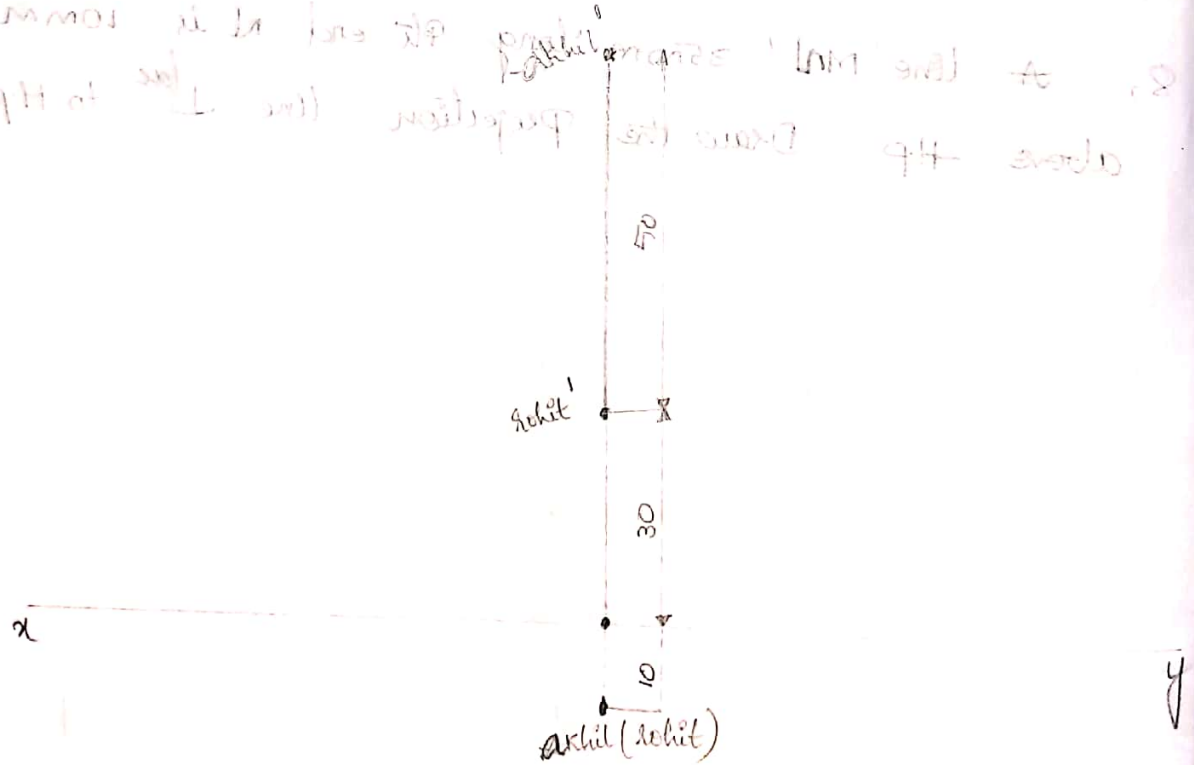
8, A line 'MN' 35mm long ⫫ end N is 10mm above H.P. Draw the projection line ⊥ar to H.P.



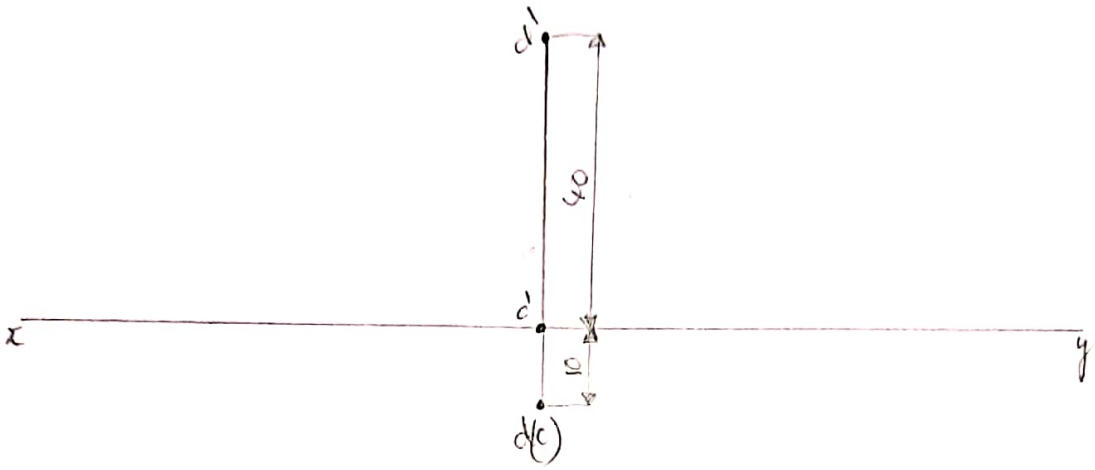
9. A line CD ⊥ar to H.P 50mm long & its end D is 20mm above HP 20mm infront of VP.



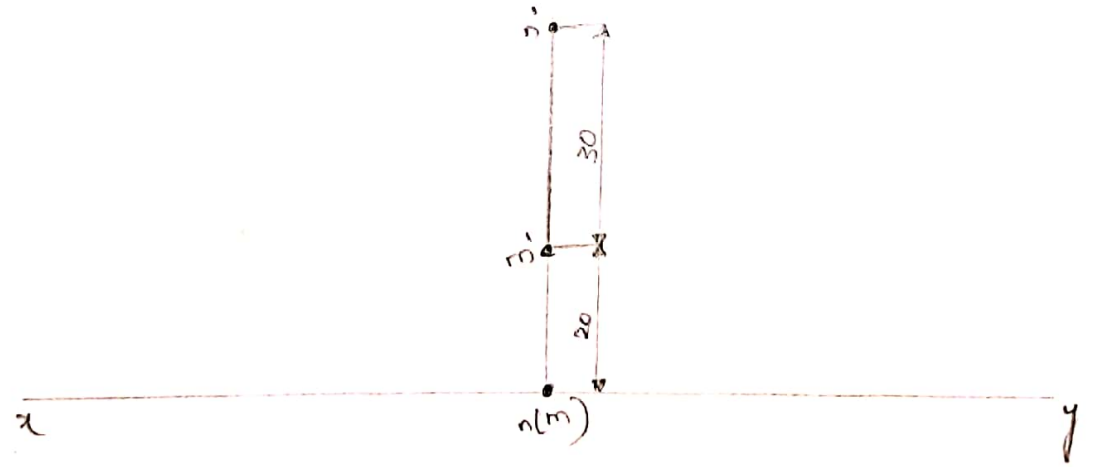
10, A line rohit Akhil 50mm long & its end rohit is 30mm above Hp, 10mm infront of V.p. The line is ⊥ar to H.p.



11, A line CD 40mm long Pts end 'c' is touches to HP 10mm infront of VP. The line is $\perp^{lar}$ to H.P, $\parallel^{el}$ to VP.



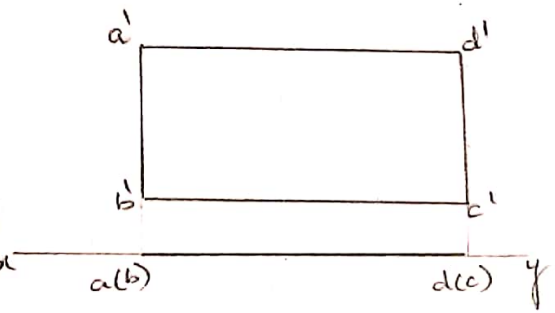
12, A line MN 30mm long Pts end M is 20mm above H.P and the line $\perp^{lar}$ to HP, $\parallel^{el}$ to V.P. Draw the projections.



30/10/19

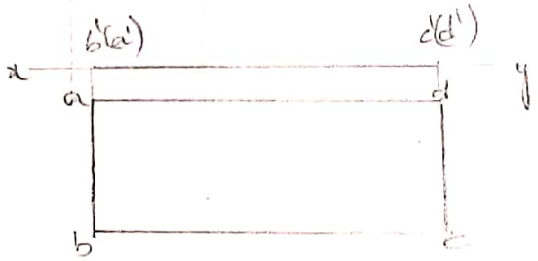
Rectangle

□ plane is resting on V.P with shortest edge/side



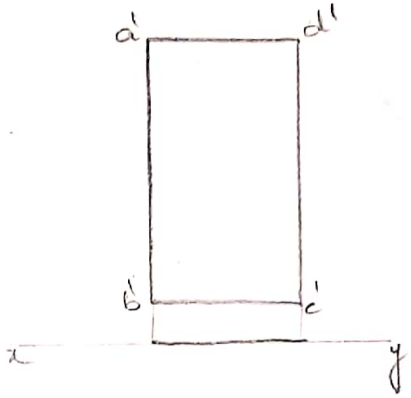
Shortest edge/side is parallel to V.P, Perpendicular to H.P.

□ plane is resting on H.P with shortest edge/side



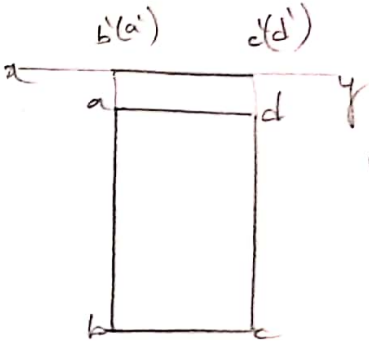
Shortest edge/side is ∥el to H.P and ⊥lar to V.P

□ plane longest side/edge is resting on V.P



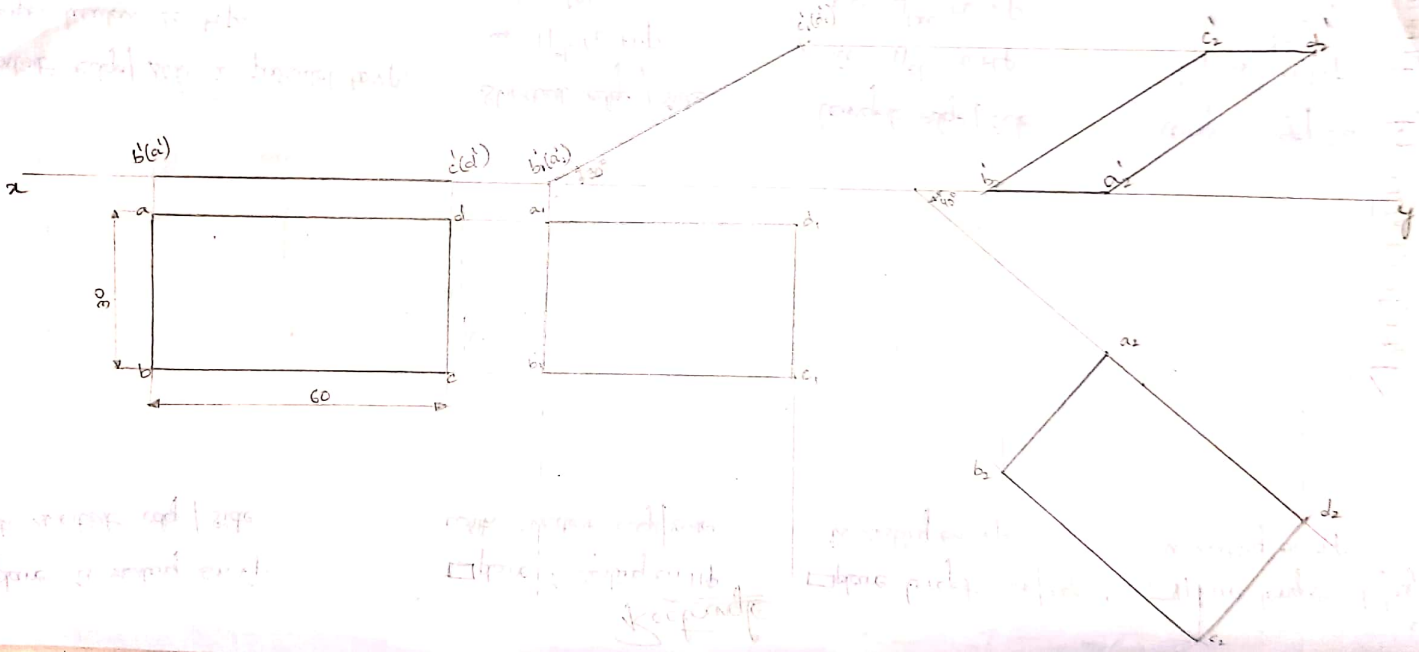
Longest edge/side is ∥el to H.P and ⊥lar to V.P

□ plane longest side/edge is resting on H.P

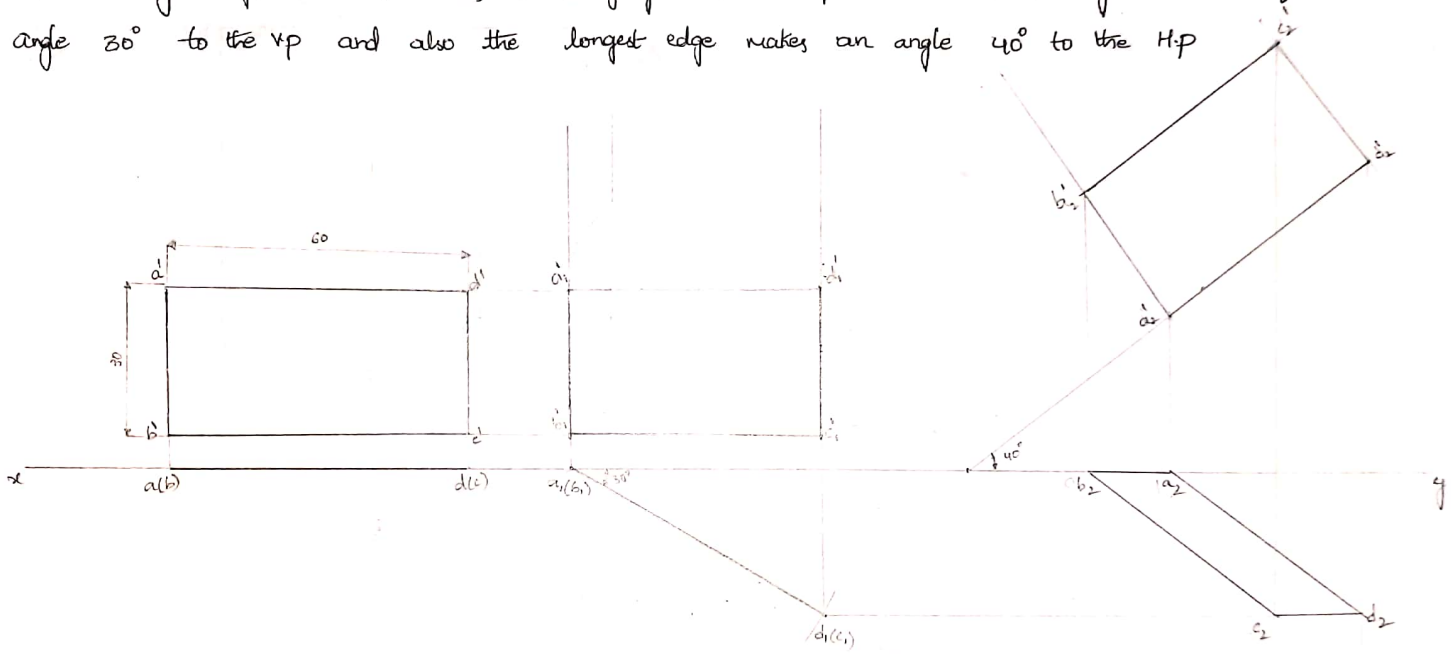


Longest edge/side is ∥el to V.P and ⊥lar H.P

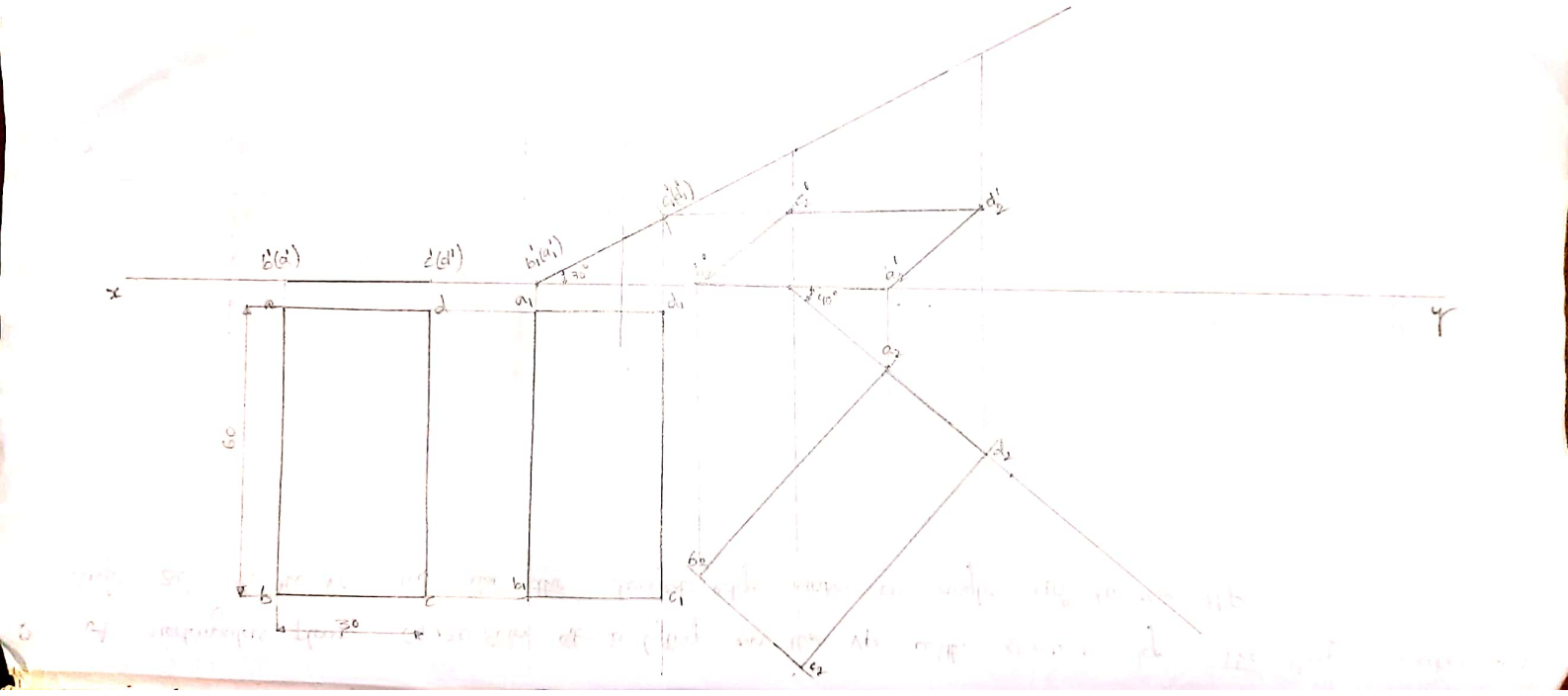
b) A rectangular plane 60x30 sides it is lying on the HP with shortest edges. The surface makes an angle 30° to the HP and also the longest edge makes an angle 40° to the VP.



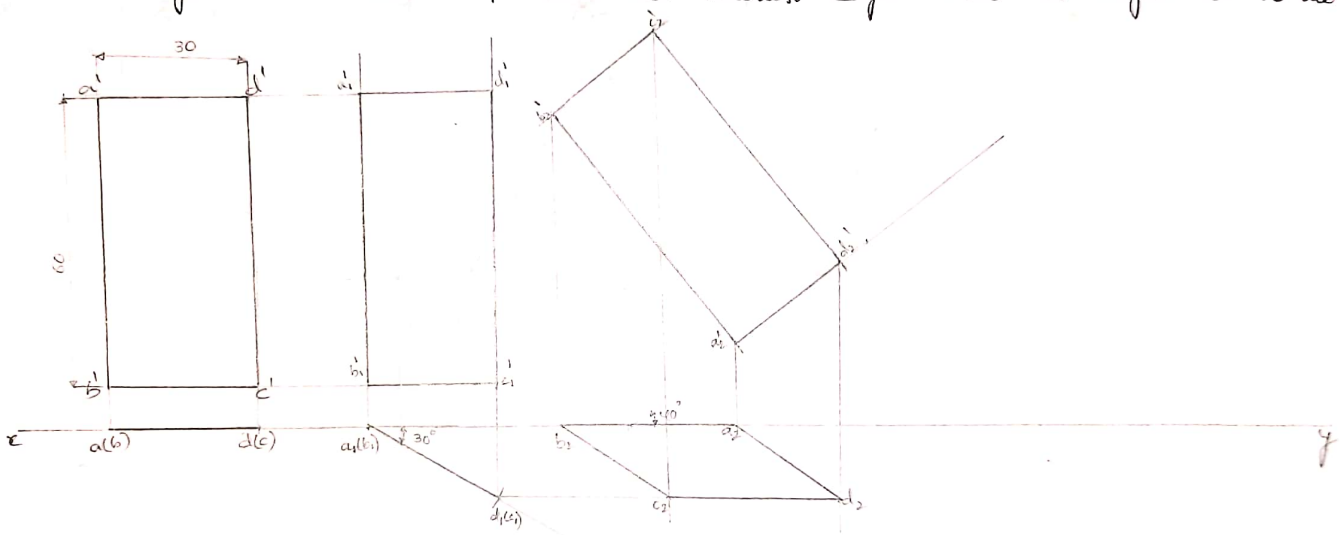
2, A rectangular plane 60x30 sides is lying on the vp with shortest edges. The surface makes an angle 30° to the vp and also the longest edge makes an angle 40° to the H.p



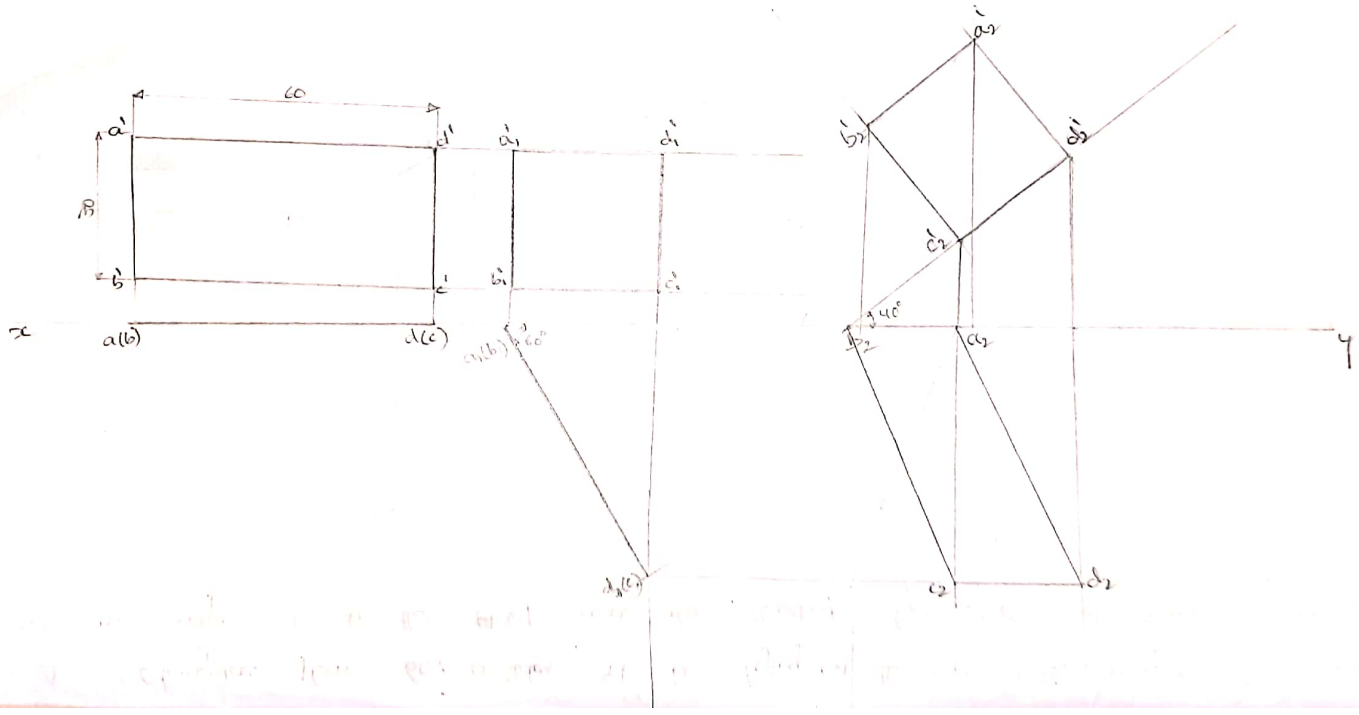
3, A ~~rectangular shape~~ vertical mirror plane 60x30 Sides ~~it~~ is lying on the HP with longest edges. The Surface make an angle 30° to the HP and also the shortest edge makes an angle 40° to the VP.



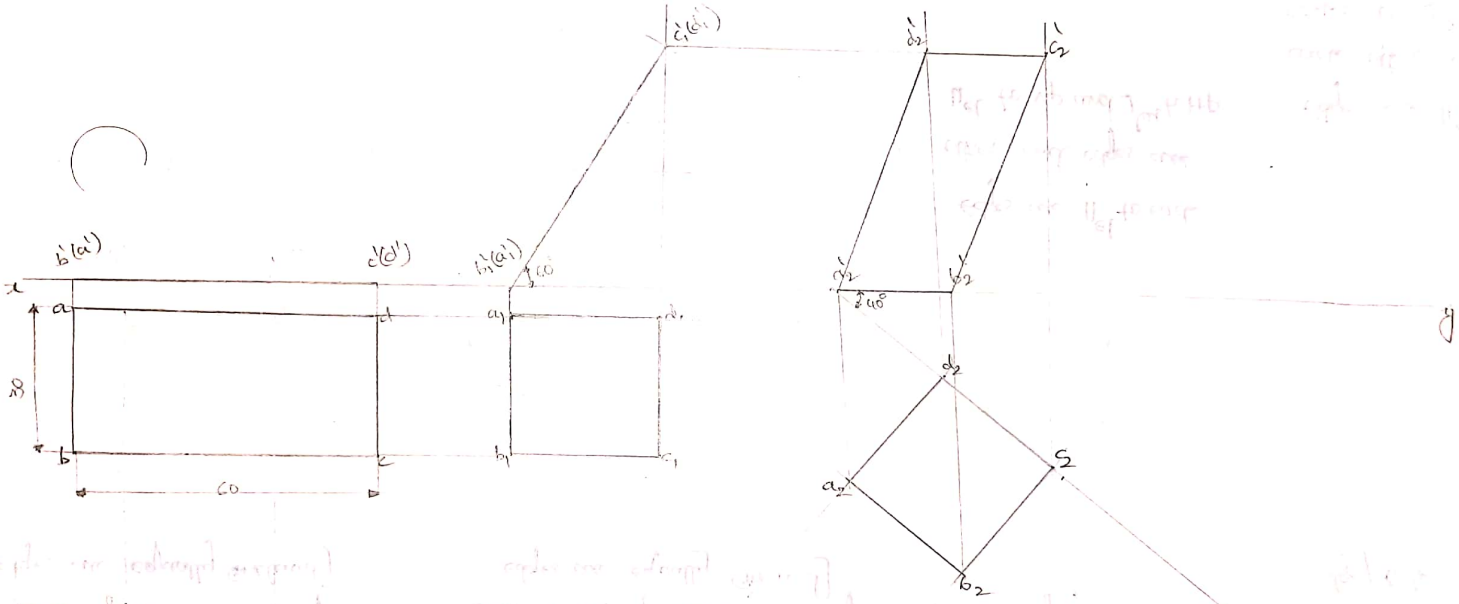
4, A rectangular plane 60×30 sides Pt is lying on the V.P with longest sides. The Surface makes an angle 30° to the V.P and also shortest edge makes an angle 40° to the H.P.



5, A rectangular Lamina having 60x30 sides it is lying on vp with shortest sides. The front view appears as a Square and the shortest edge of plane makes an angle 40° to the H.P. find out the Surface Inclination of vp.

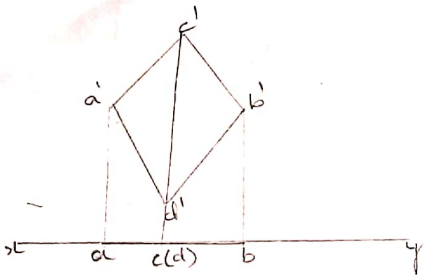


6, A rectangular Lamina having 60x30 sides. It is lying on H.P with shortest sides. The ~~front~~ top view appears as a square and the shortest side of plane ~~on~~ makes an angle 40° to the ~~H.P~~. Find out the Surface Inclination of H.P.

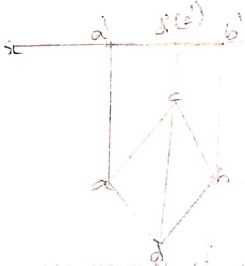


Square

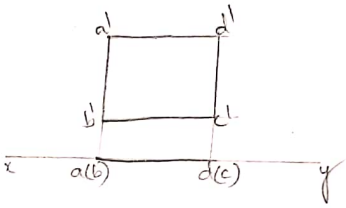
□plane is resting on Vp with corner [corner containing edges are equally inclined]



□plane is resting on H.P with corner [corner containing edges are equally inclined]

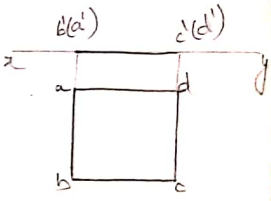


□plane is resting on V.P with edge/side



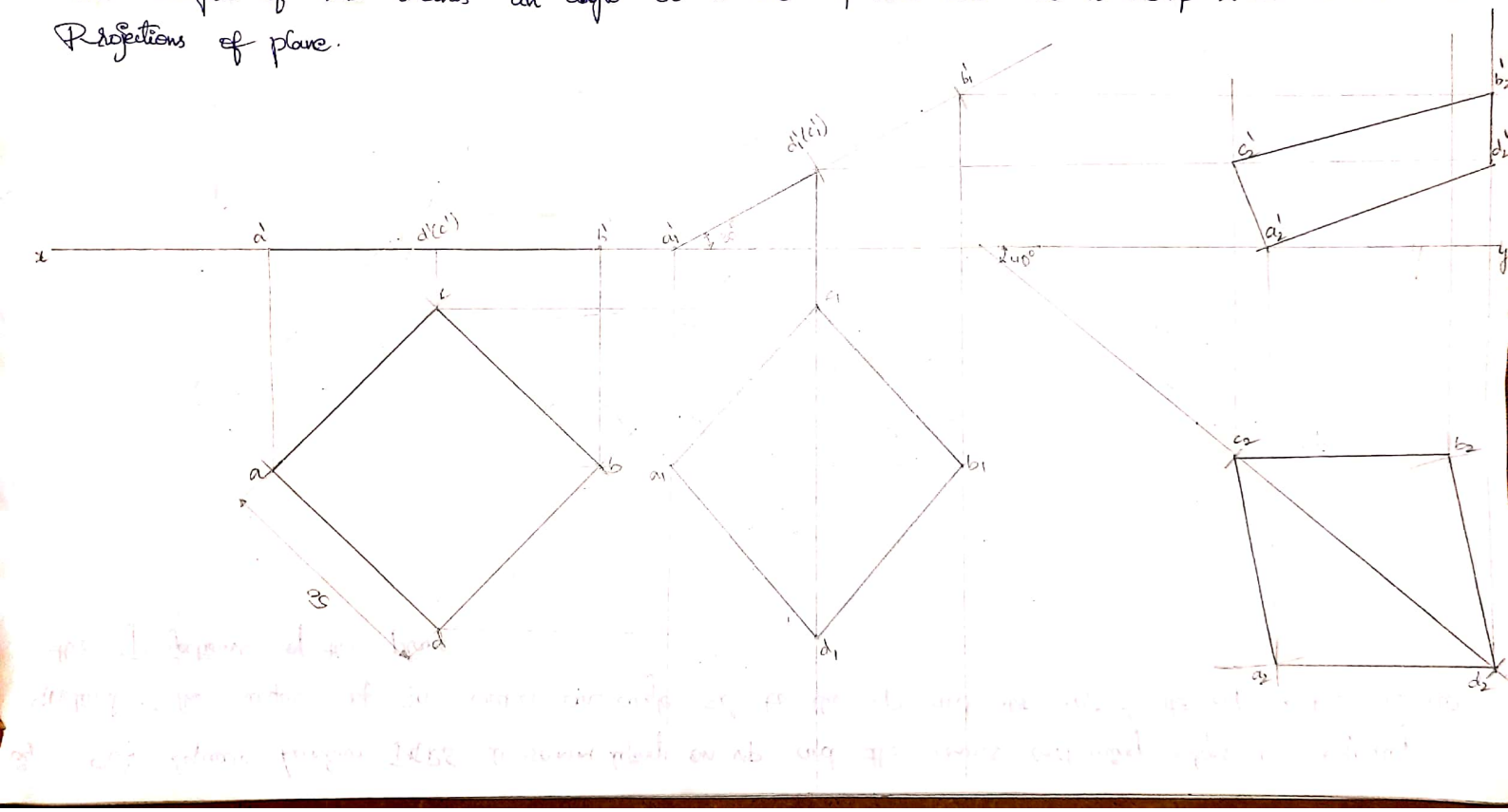
Edges are ∥el to each other and edges are ∥el to V.P and ⊥lar to H.P

□plane is resting on H.P with edge/side.

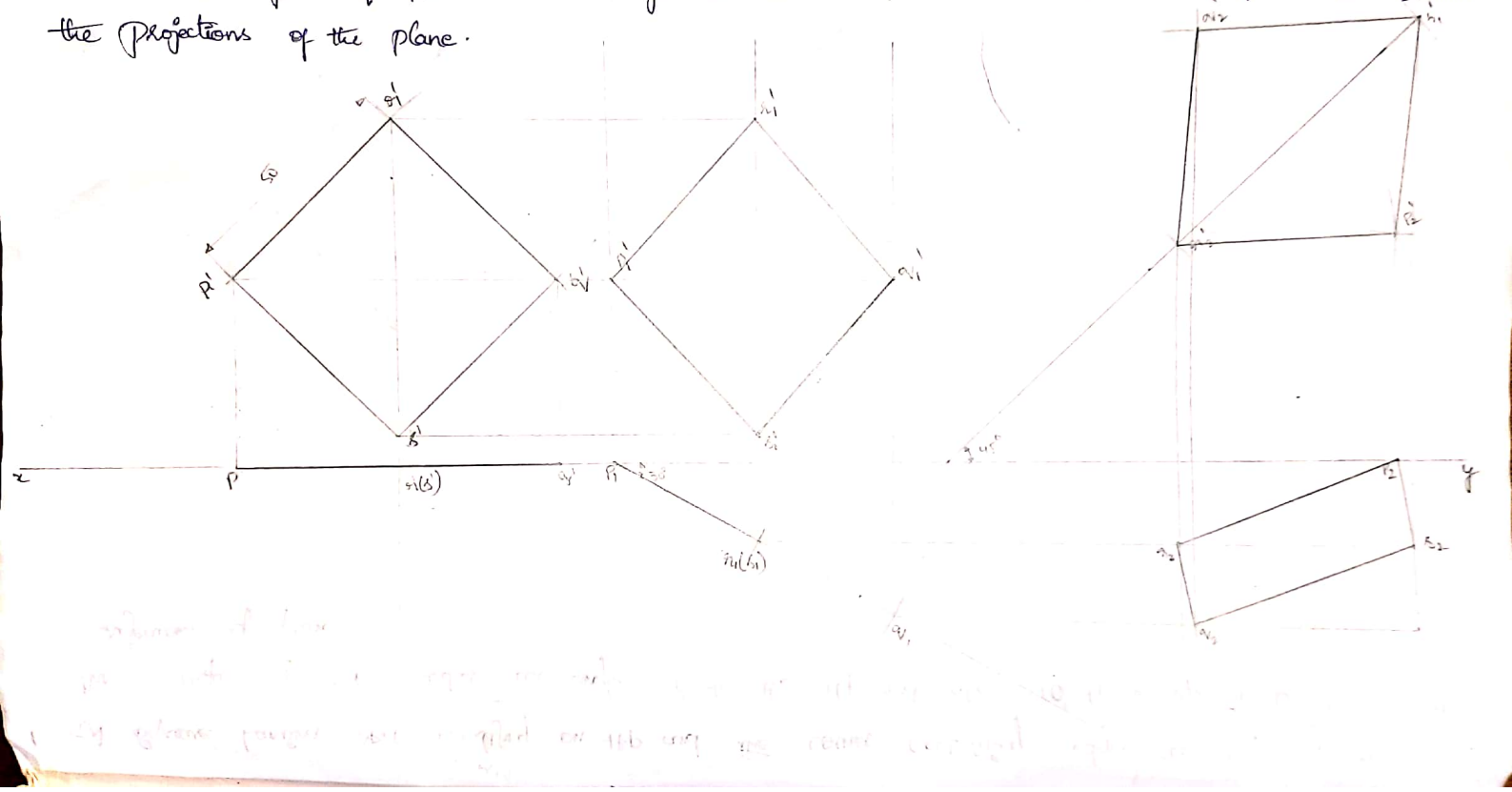


Edges are ∥el to each other and edges are ⊥lar to V.P and ∥el to H.P

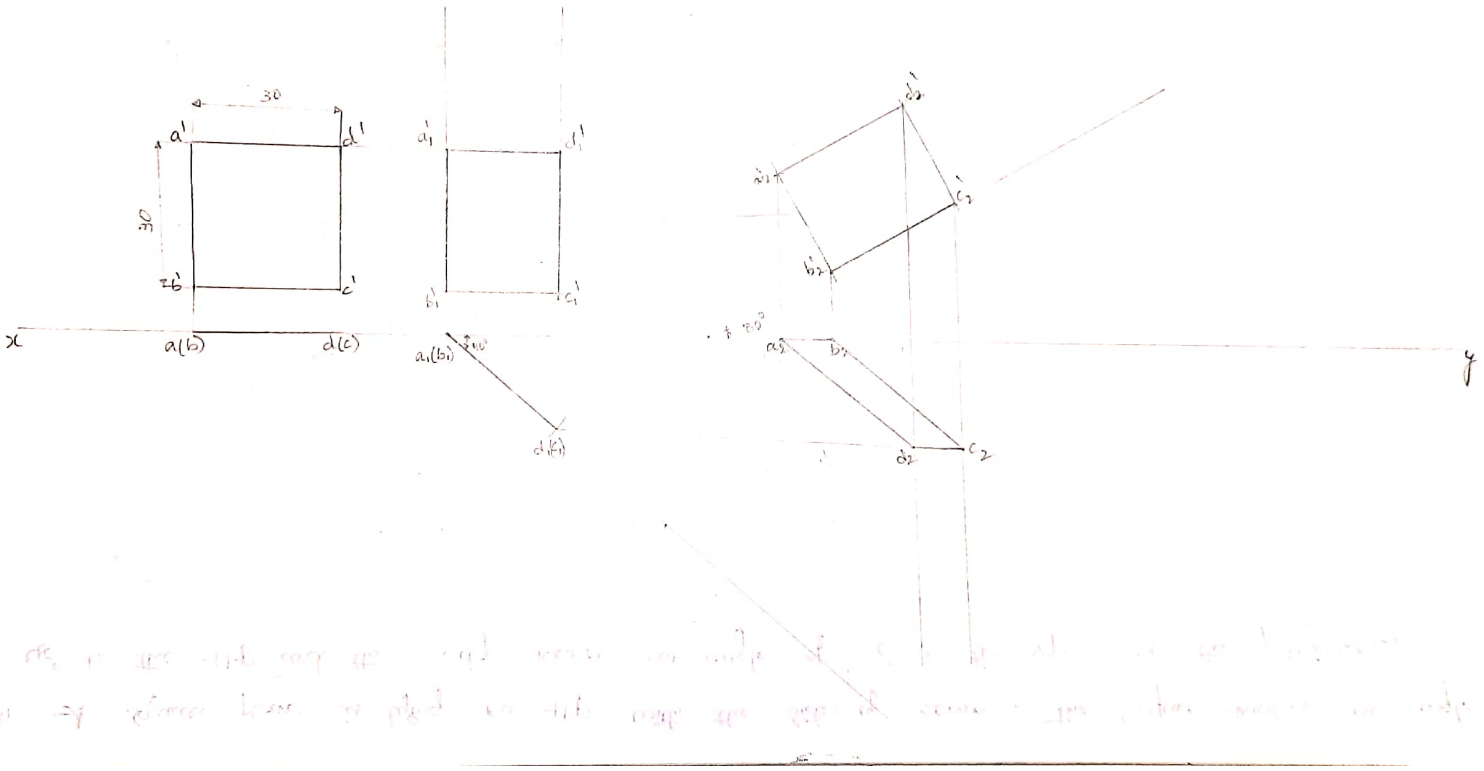
1) A Square Lamina ABCD is lying on H.P and the corner containing edges are equally Inclined. The Surface of AB makes an angle 30° to the H.P and also 45° to the V.P is CD. Draw the Projections of plane.



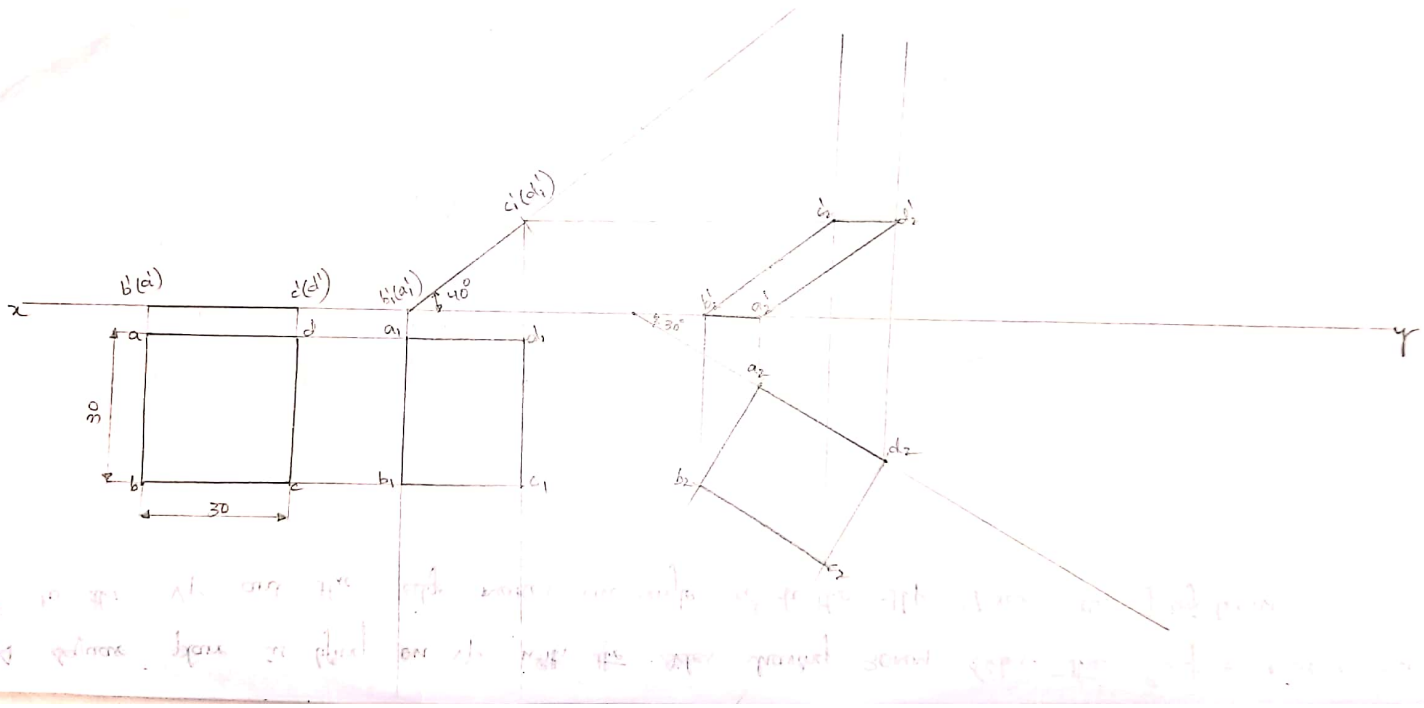
8) A Square Lamina PQRS is 50 mm lying on VP and the corner containing edges are equally inclined. The Surface of PQ makes an angle 30° to the VP and also 45° to the HP is RS. Draw the projections of the plane.



3, A square plane is lying on v.p with the sides having 30mm sides. The Surface makes an angle 40° to the v.p and the edge makes an angle 30° to the H.P. Draw the projections.

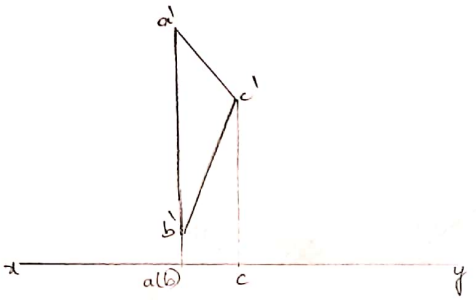


4) A square plane is lying on HP with the sides of 30mm. The surface makes an angle 40° to the HP and the edge makes an angle of 30° to the VP. Draw the projections.



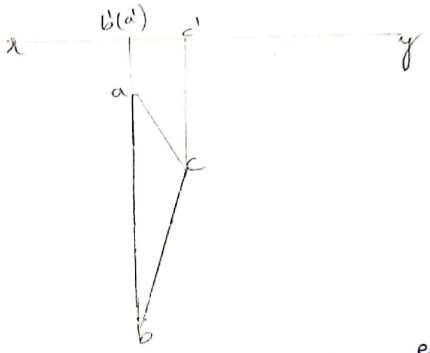
Set Squares

A Set square 30,60 lying on V.P with longest side.



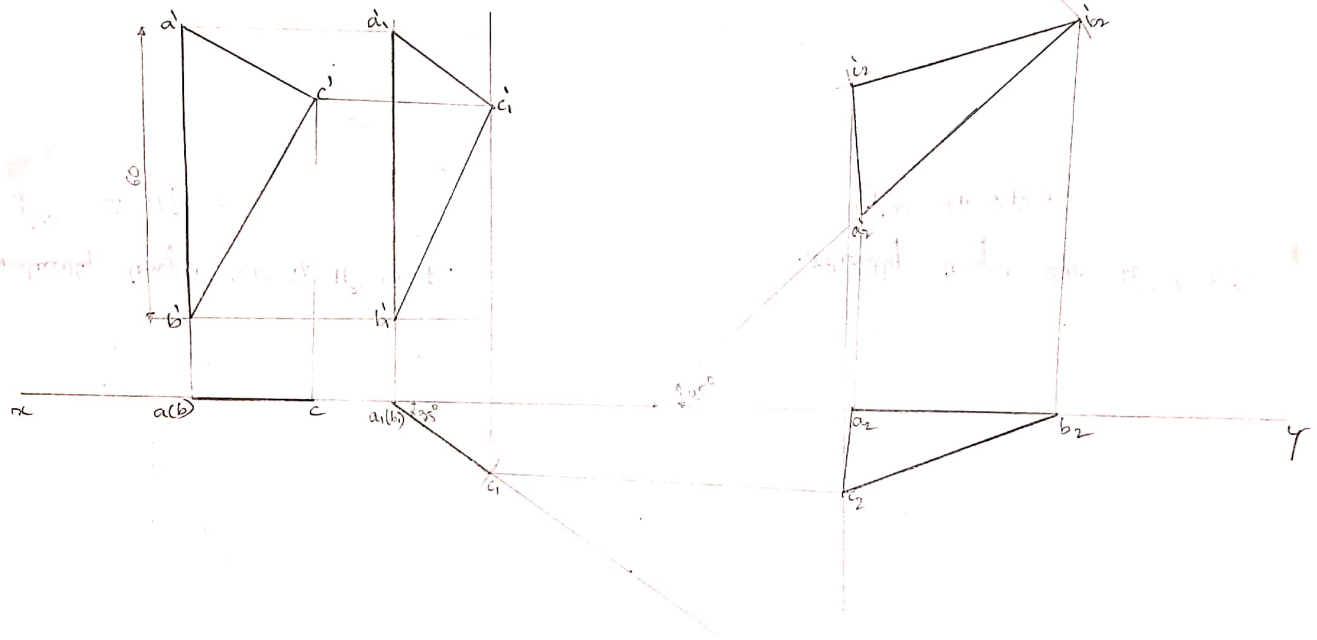
Vertically longest side is ||el to V.P,
⊥lar to H.P

A Set square 30x60 lying on H.P with longest side.

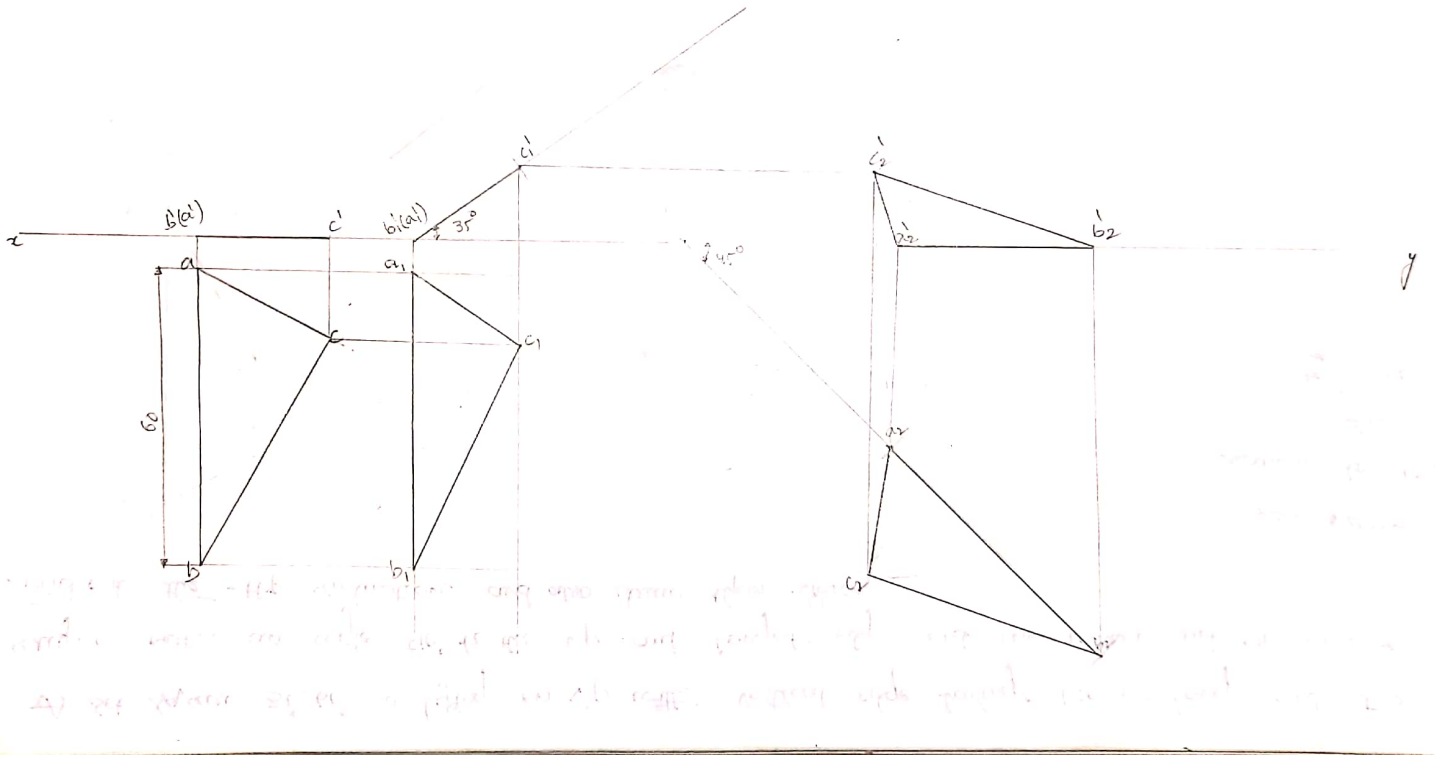


Vertically longest side ||el to H.P
⊥lar to V.P.

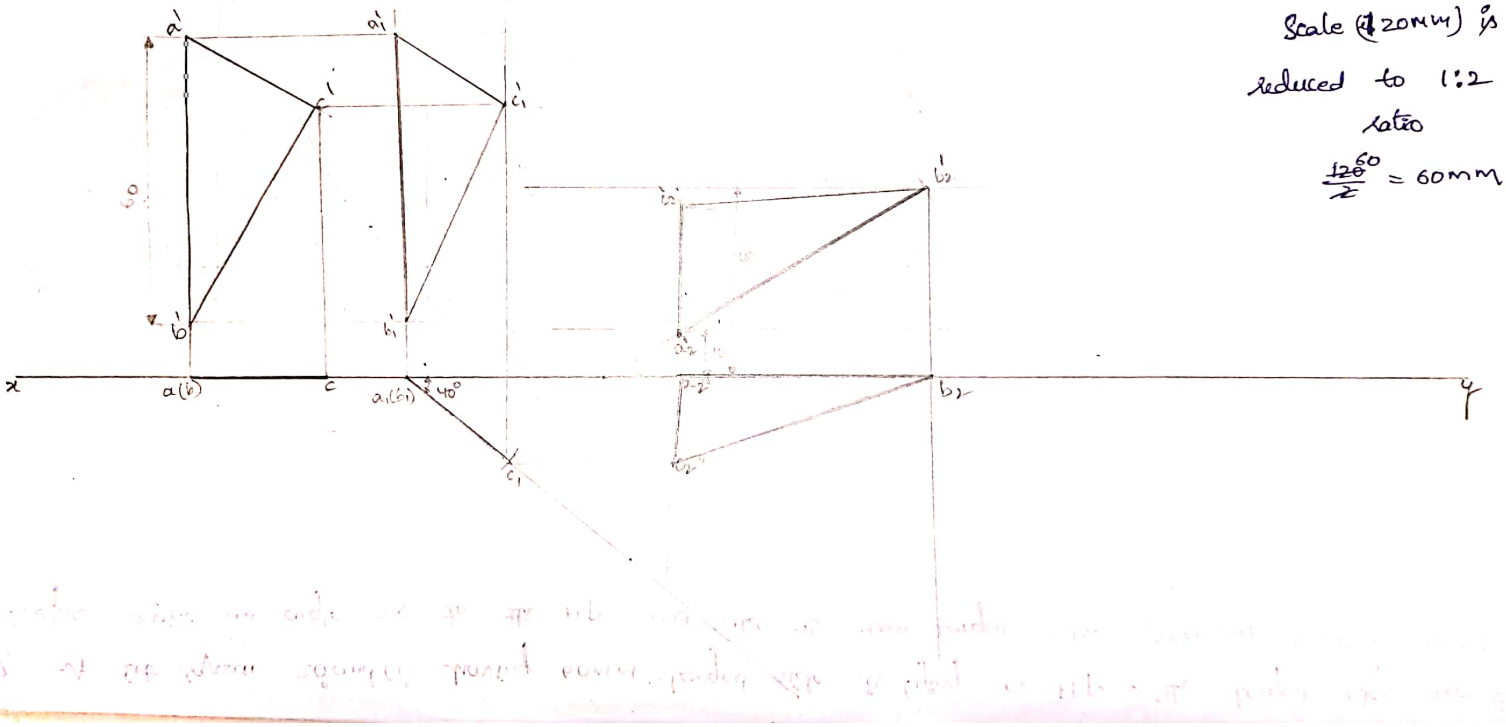
1, A set square 30° and 60° having 60 mm longest side is lying on V.P with longest edge and the surface makes an angle 35° to the V.P and also the longest edge makes an angle 45° to the H.P



2) A Set Square 30° and 60° having 60mm longest side is lying on H.P with longest edge and the Surface makes an angle 35° to the H.P and also the ~~base~~ longest edge makes an angle 45° to the V.P.



3, A set square 30, 60° is lying on V.P with vertical edge having 120mm long and the surface makes an angle 40° to the V.P and longest edge ends are 10mm and 40mm above H.P. find out the H.P inclination and also draw their views.



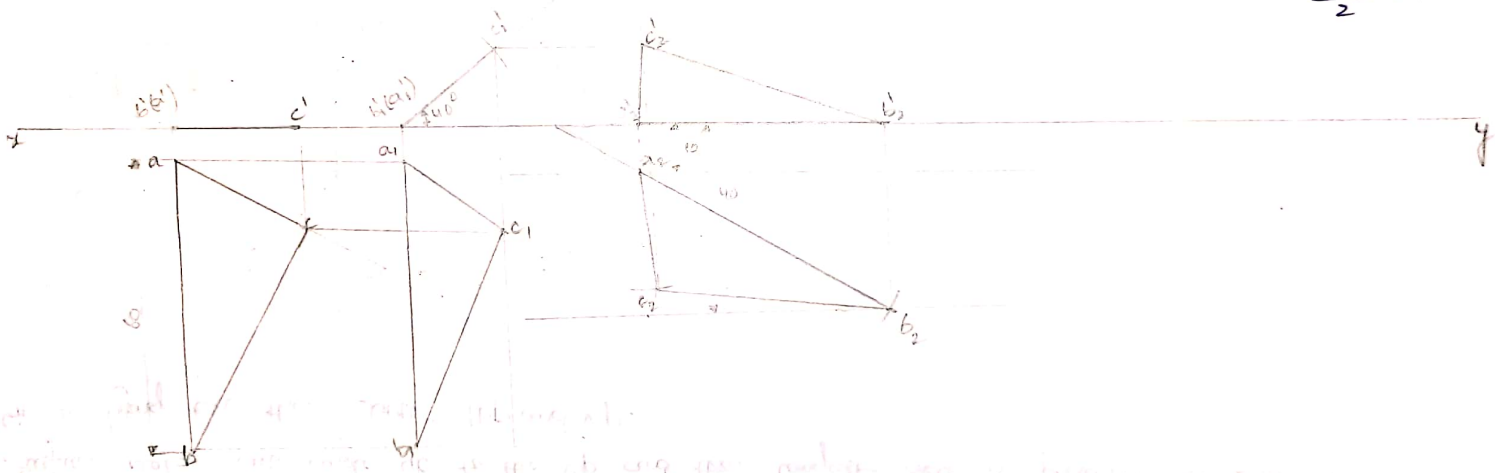
Scale (120mm) is reduced to 1:2 ratio

$\frac{120}{2} = 60mm$

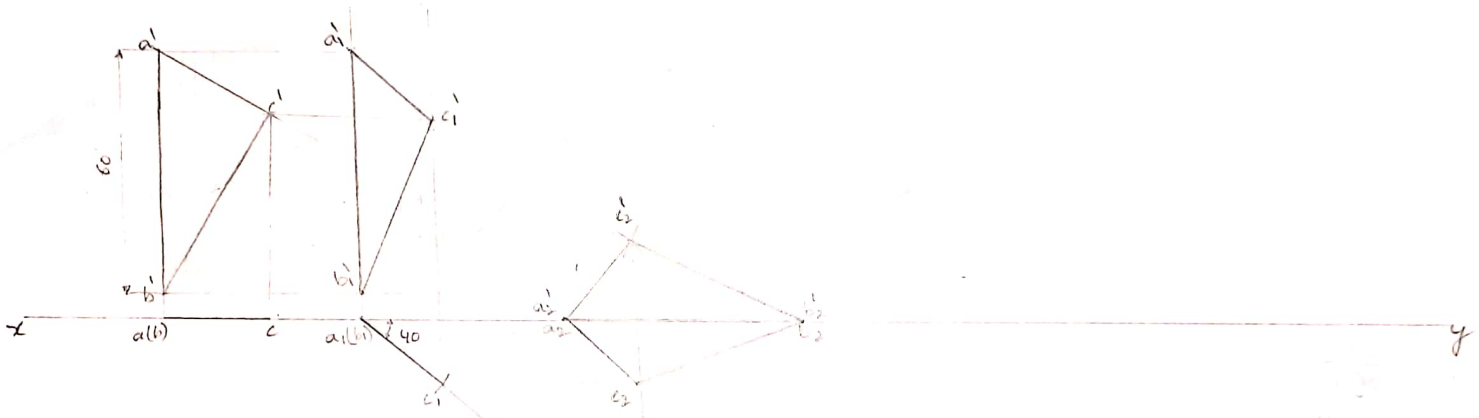
4) A Set Square 30°, 60° is lying on H.P with vertical edge having 120mm long and the Surface makes an angle 40° to the H.P and longest edge ends are 10mm and 40mm infront of V.P. find out the V.P inclination and also draw their views.

Scale reduced to 1:2 ratio

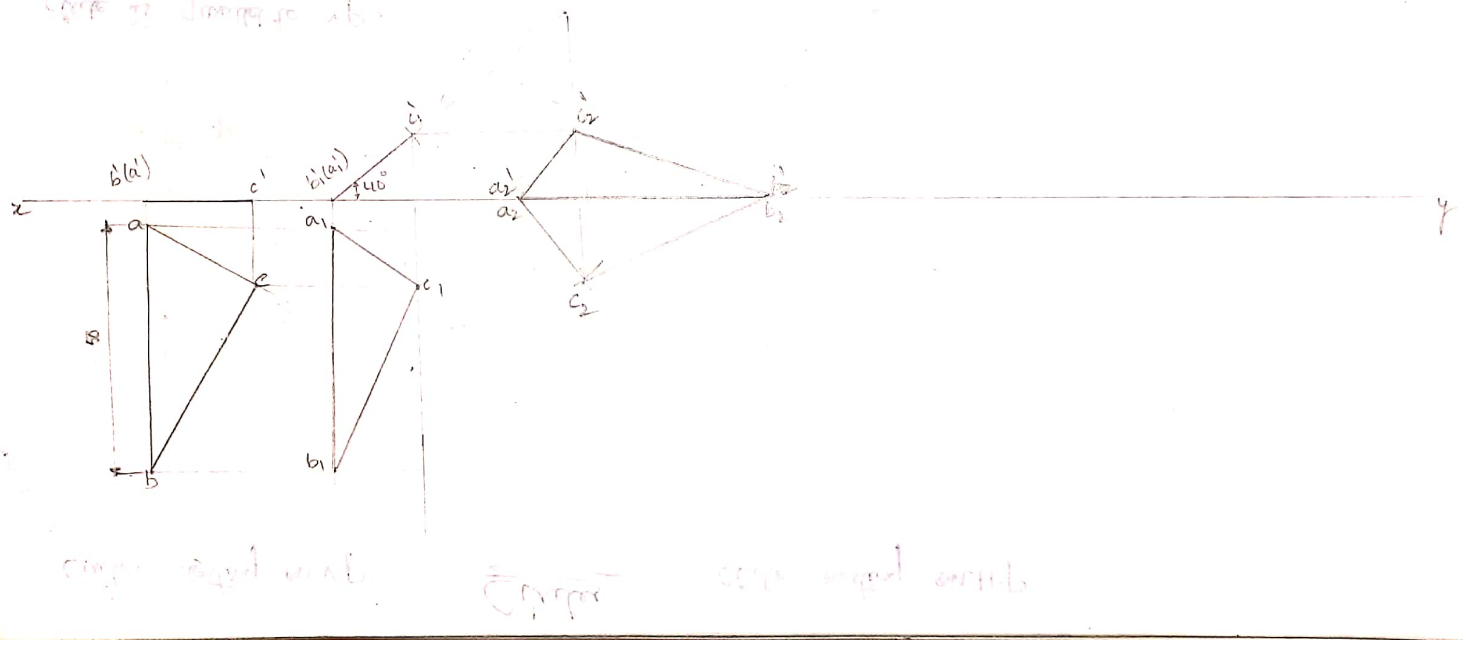
$\frac{100}{2} = 60mm$



5, A set square having 50 MM long vertical edge is lying on the wall vertically. And the surface makes an angle 40° to the v.p and the longest side is parallel to both planes and it is lying on the both H.p and v.p.

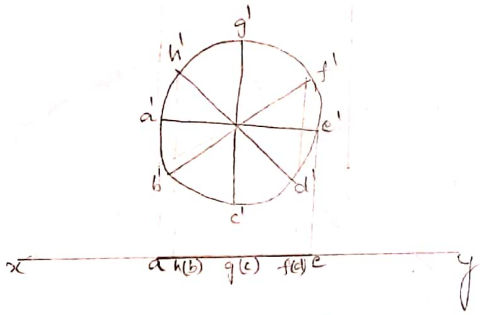


6, A Set Square having 50 mm long vertical edge is lying on the ground vertically. And the Surface makes an angle 40° to the H.P and the longest side is parallel to both planes and it is lying on the both H.P and V.P.



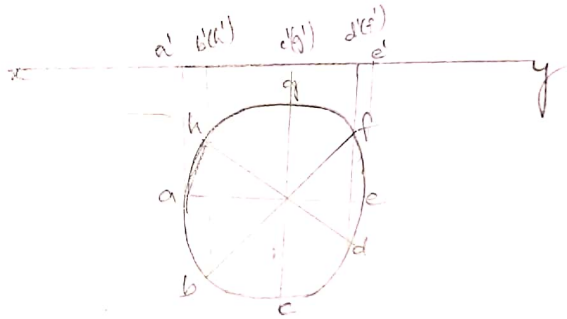
Circles

Circle resting on v.p



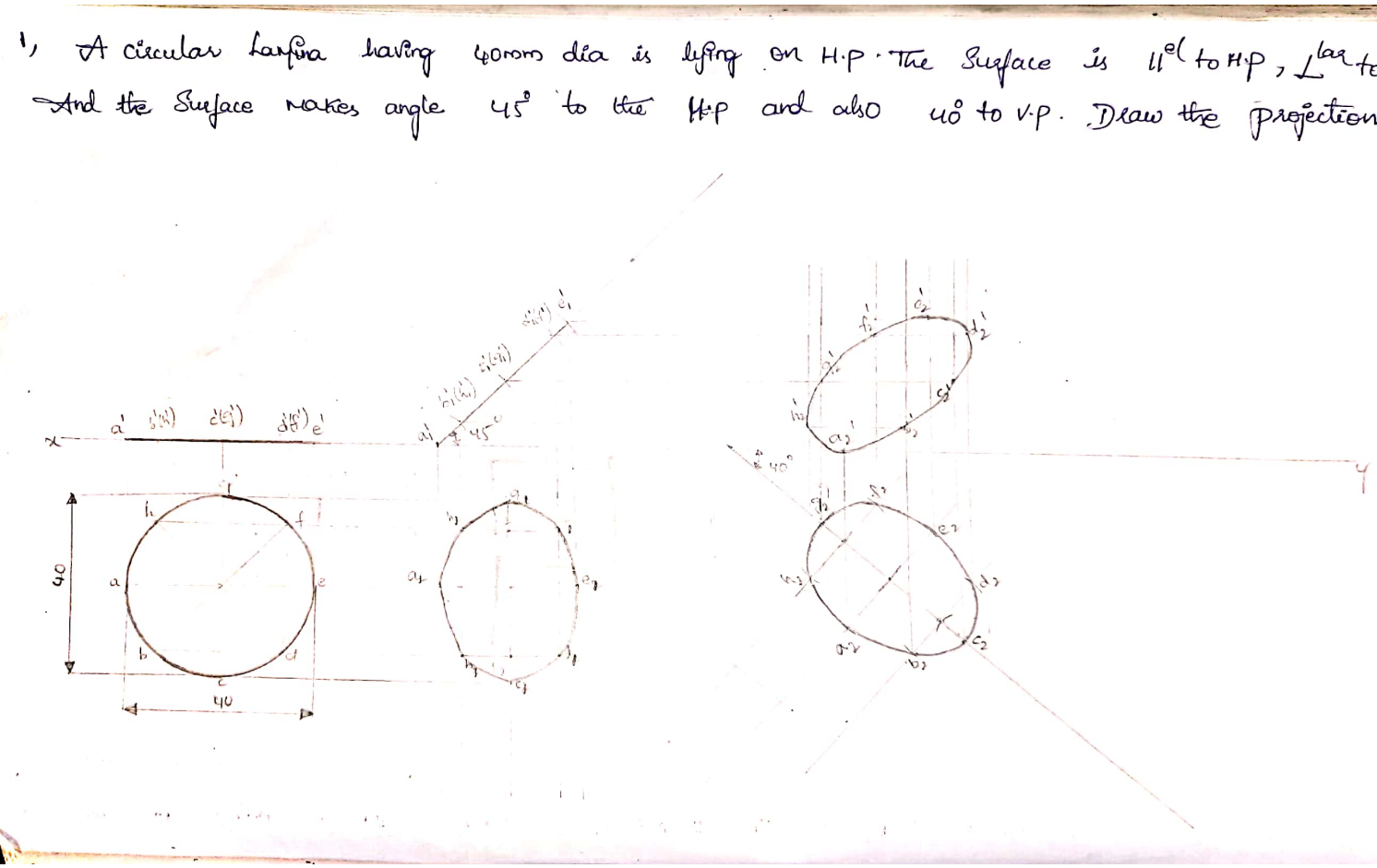
circle is parallel to v.p,
⊥ar to H.P

Circle resting on H.P

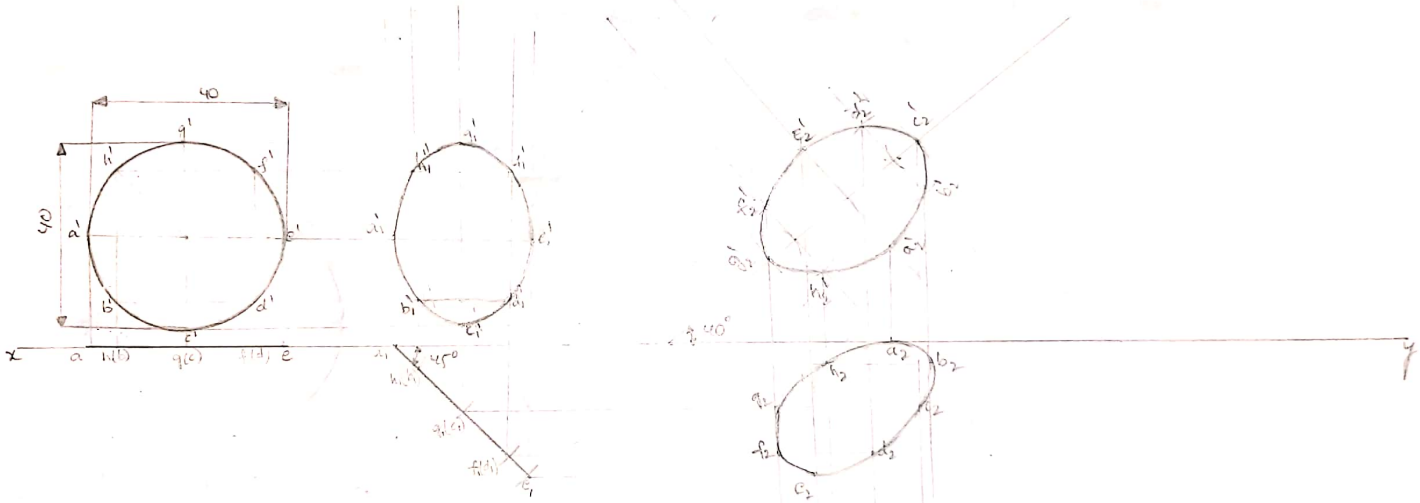


It is ||el to H.P
⊥ar to v.p

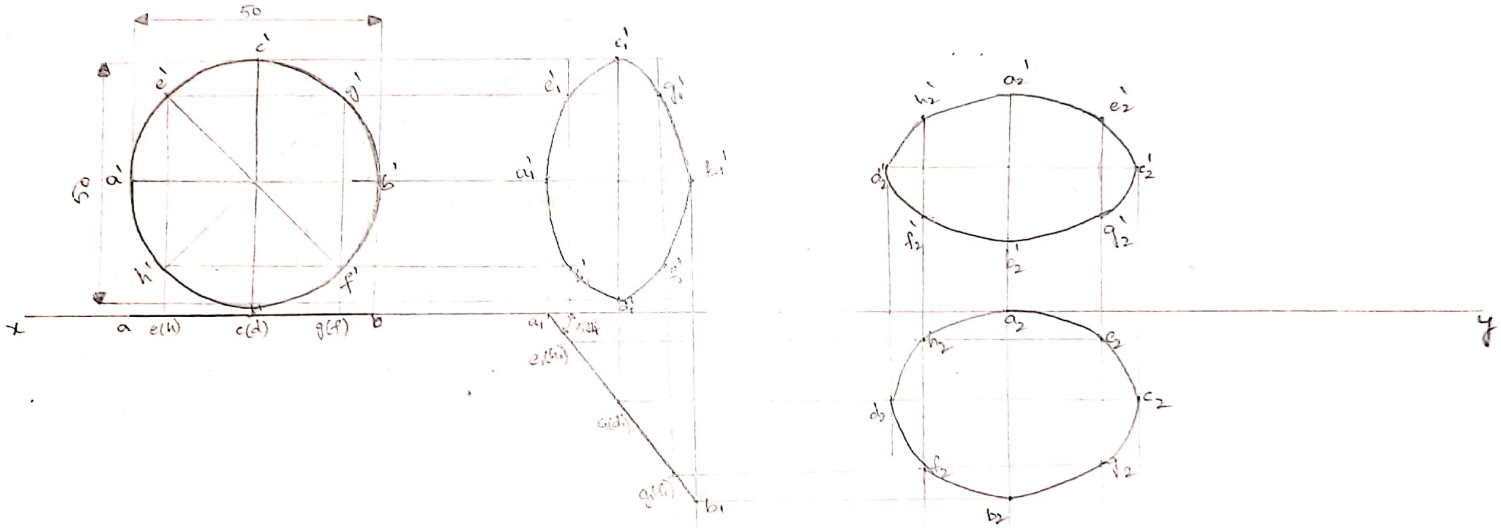
1) A circular lamina having 40mm dia is lying on H.P. The surface is ∥el to H.P, ⊥ar to V.P. And the surface makes angle 45° to the H.P and also 40° to V.P. Draw the projections.



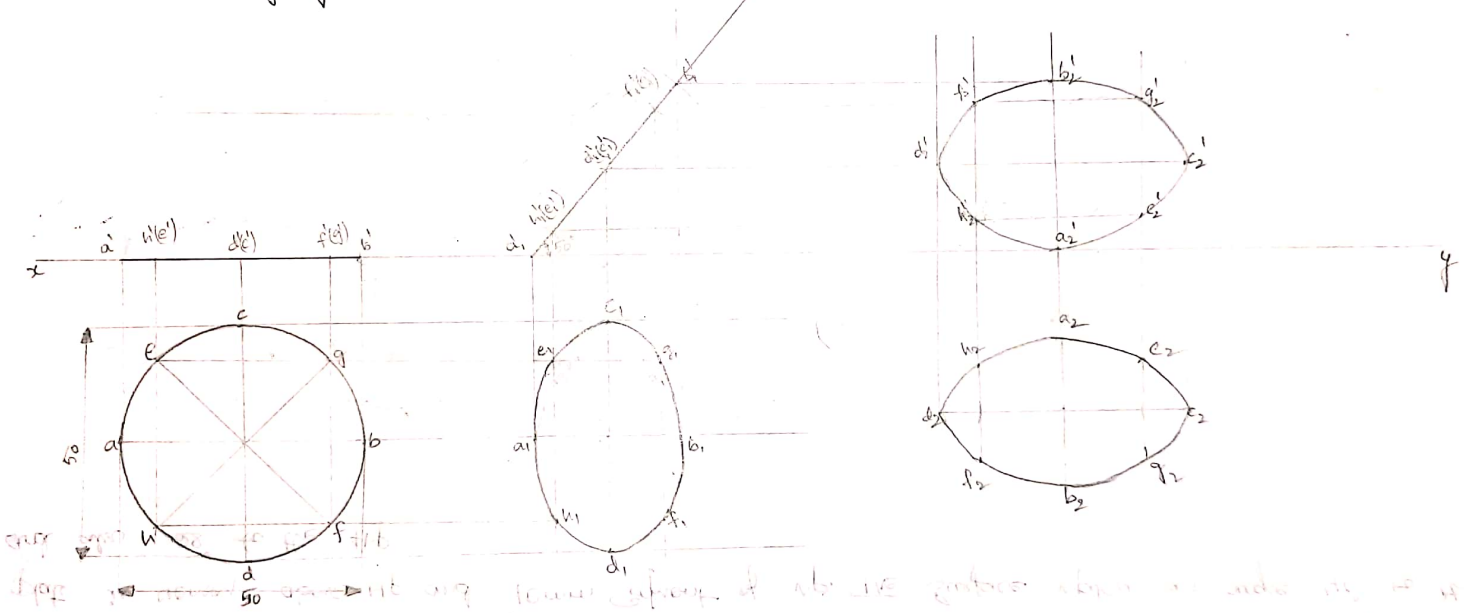
2, A Circular Lamina having 40mm dia is lying on V.P. The Surface is $\parallel^{el}$ to V.P, $\perp^{ar}$ to H.P And the Surface makes angle 45° to the V.P and also 40° to H.P. Draw the projections.



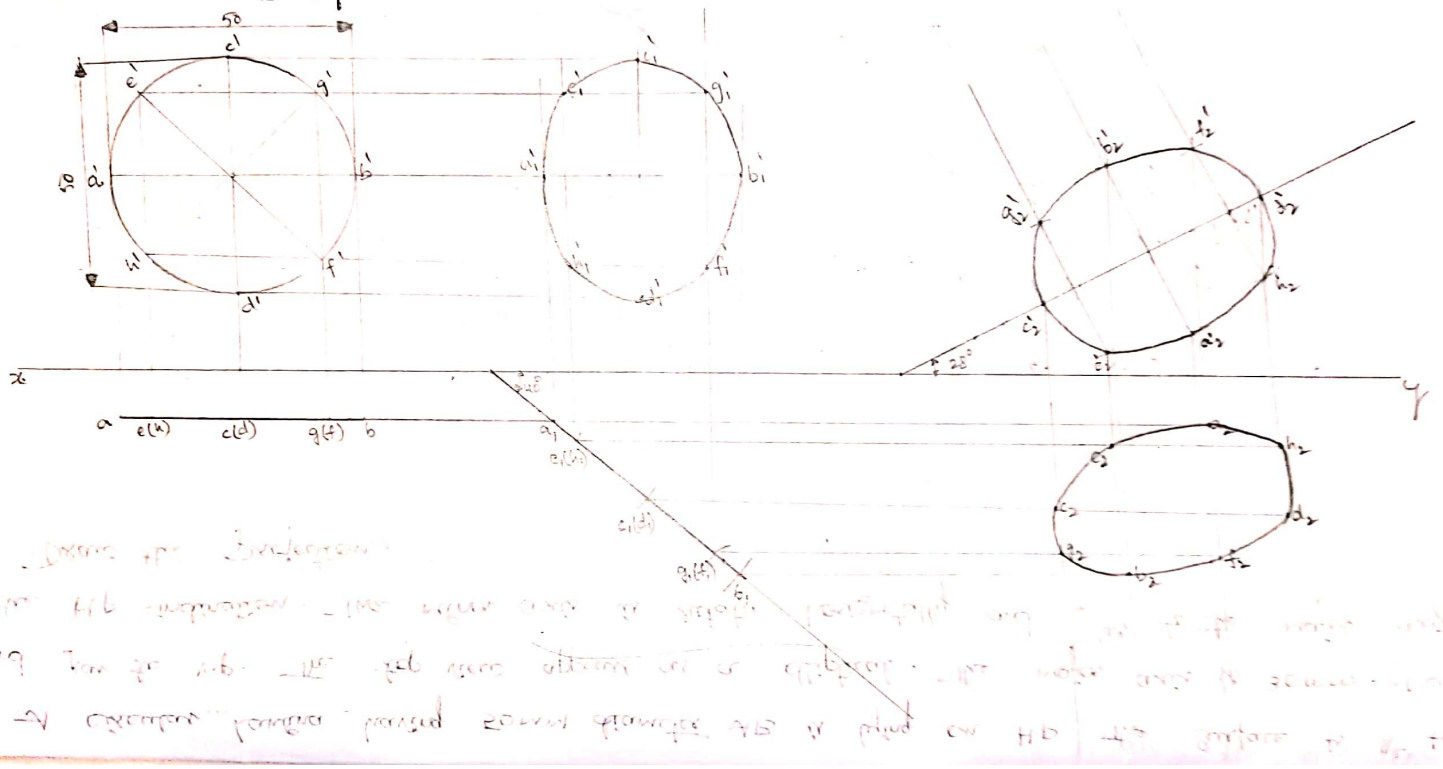
3, A circular Lamina having 50mm diameter AB is lying on VP. The Surface is ⊥ᵉˡ to VP and ⊥ᵉˡ to H.P. The front view appears as a elliptical. The major axis is 30mm - find out the VP Inclination. The minor axis is rotates horizontally and ⊥ᵃʳ to the major axis. [The major axis is ⊥ᵃʳ to the H.P and the minor axis is ||ᵉˡ to both H.P and VP]. Draw the Projections.



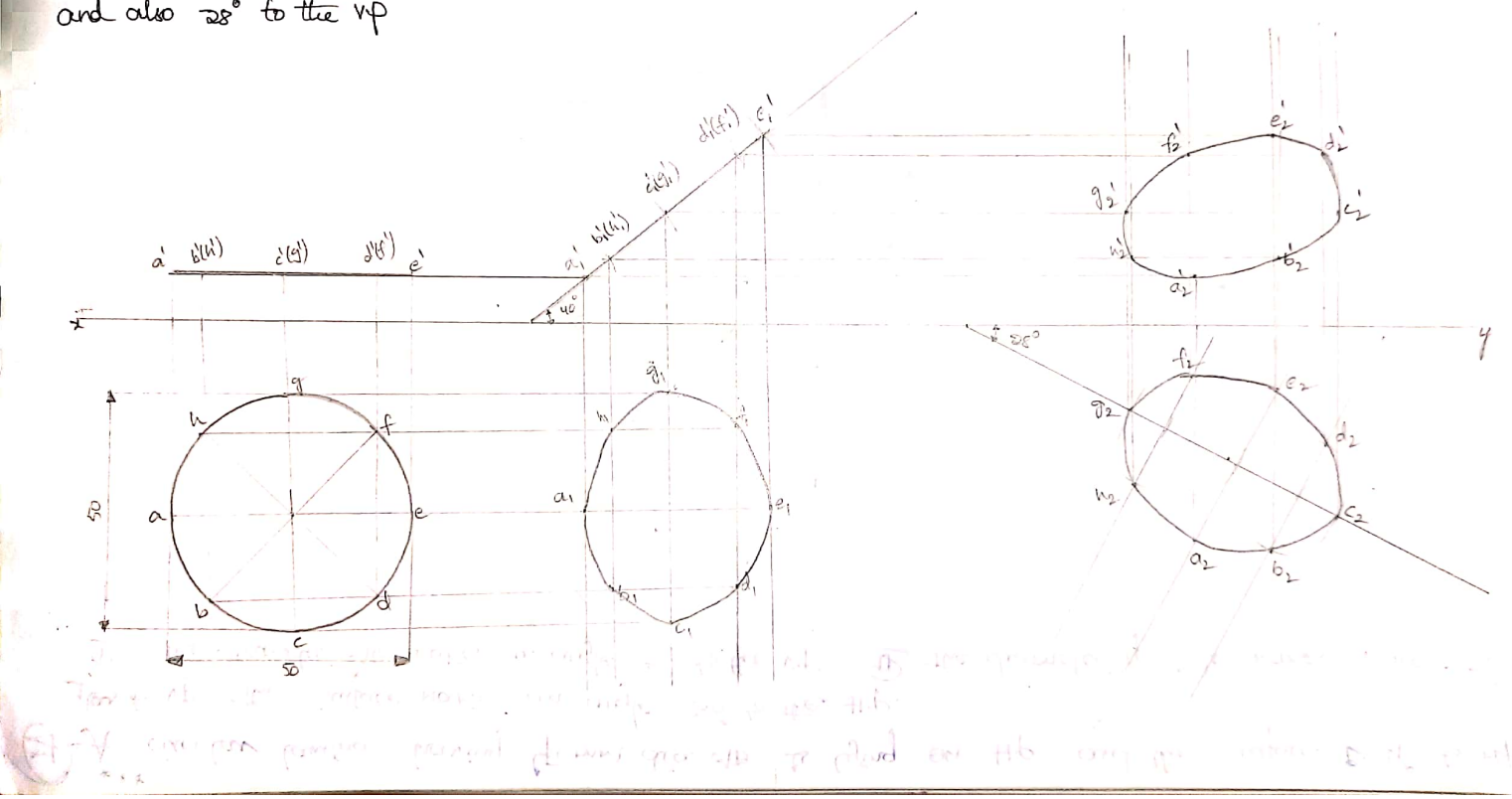
5. A circular lamina having 50mm diameter AB is lying on H.P. The surface is ⊥ to H.P and ∥ to V.P. The top view appears as a elliptical. The major axis is 30mm, find out the H.P Inclination. The minor axis is rotates horizontally and ⊥ to the major axis. Draw the projection.



5) A thin circular plate having 50mm dia is lying on v.p. The centre point of circular plate is 40mm above Hp and 10mm infront of v.p. The surface makes an angle 40° to the v.p and also 28° to the H.p.

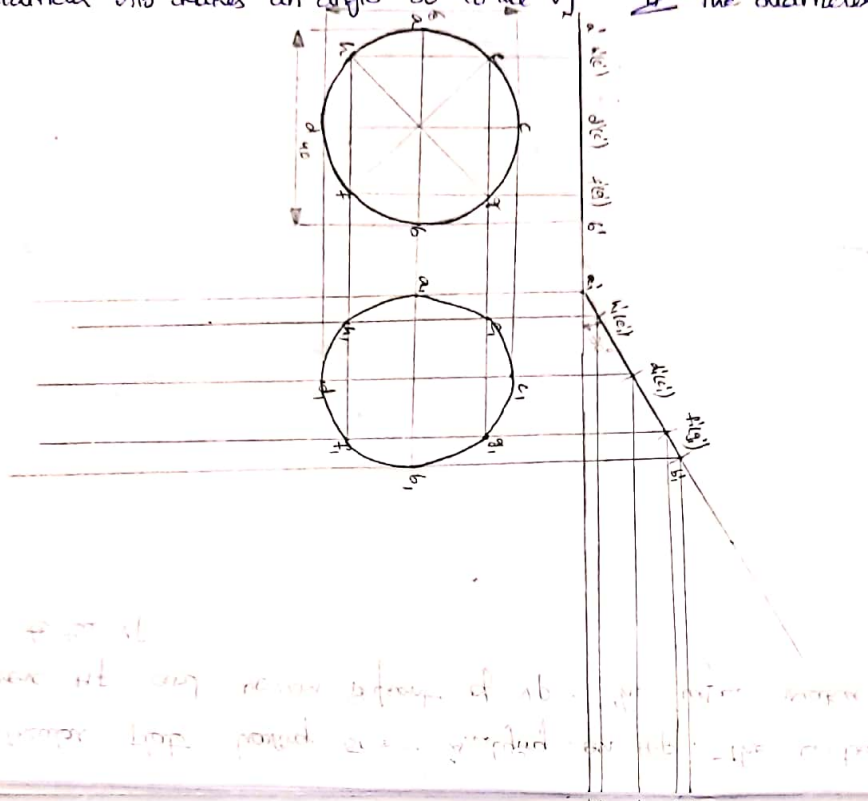


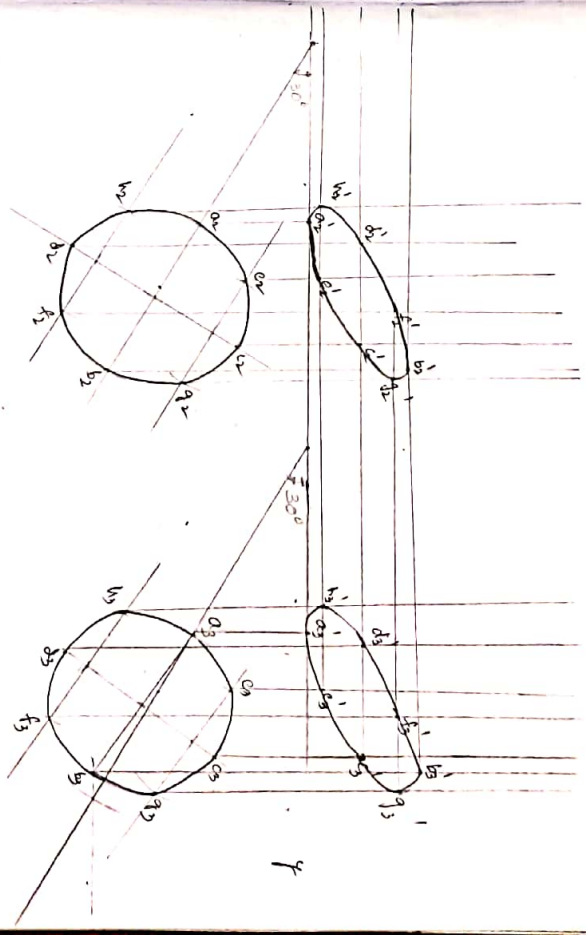
6, A thin circular plate having 50 mm is lying on H.P. The centre point of circular plate is 10mm above H.P and 40mm infront of V.P. The surface makes an angle 40° to the H.P. and also 25° to the VP



7) A *** circular lamina having 40 mm dia AB is lying on HP and the surface is ||el to HP ⊥ar to VP. The surface makes an angle 30° to the H.P.

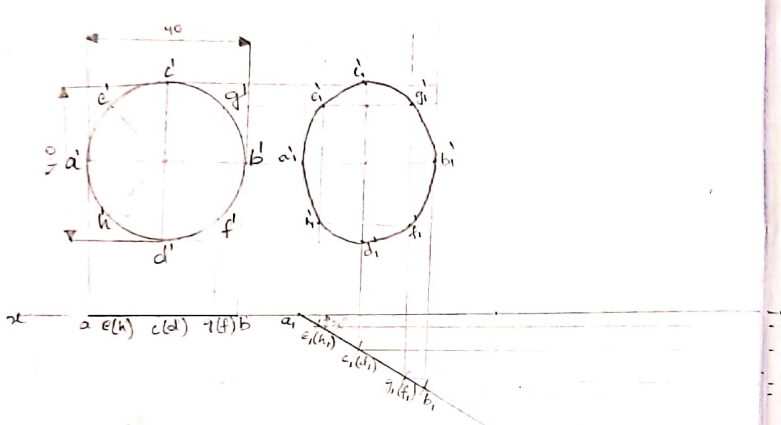
I. The diameter AB makes an angle 60° to the V.P. II. The diameter of circle makes an angle 30° to V.P

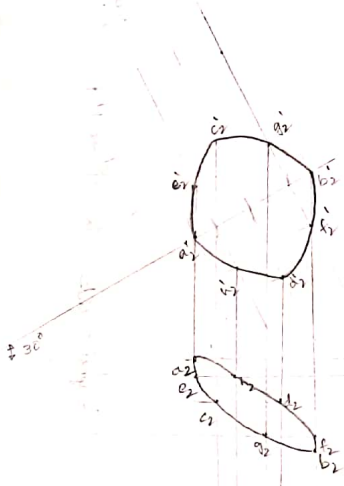


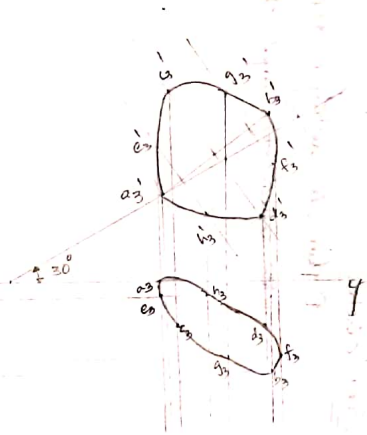


8, A circular lamina having 40mm dia AB is lying on VP and the surface is ∥el to VP and ⊥lar to H.P. The surface makes an angle 30° to the V.P.

① the dia AB makes an angle 30° to H.P ② the dia of circle makes an angle 30° to H.P

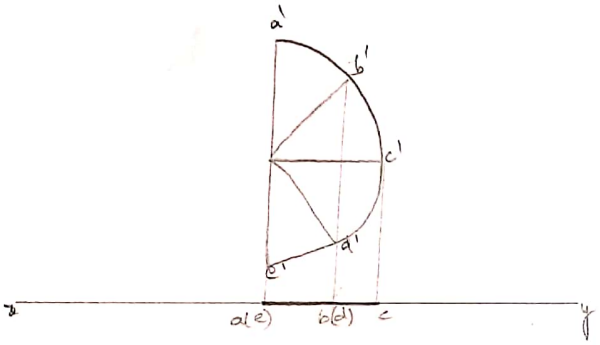






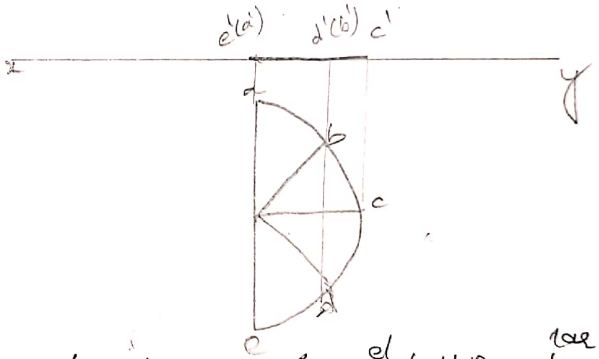
Semi circles

D plane is resting on v.p with vertical edge / longest side



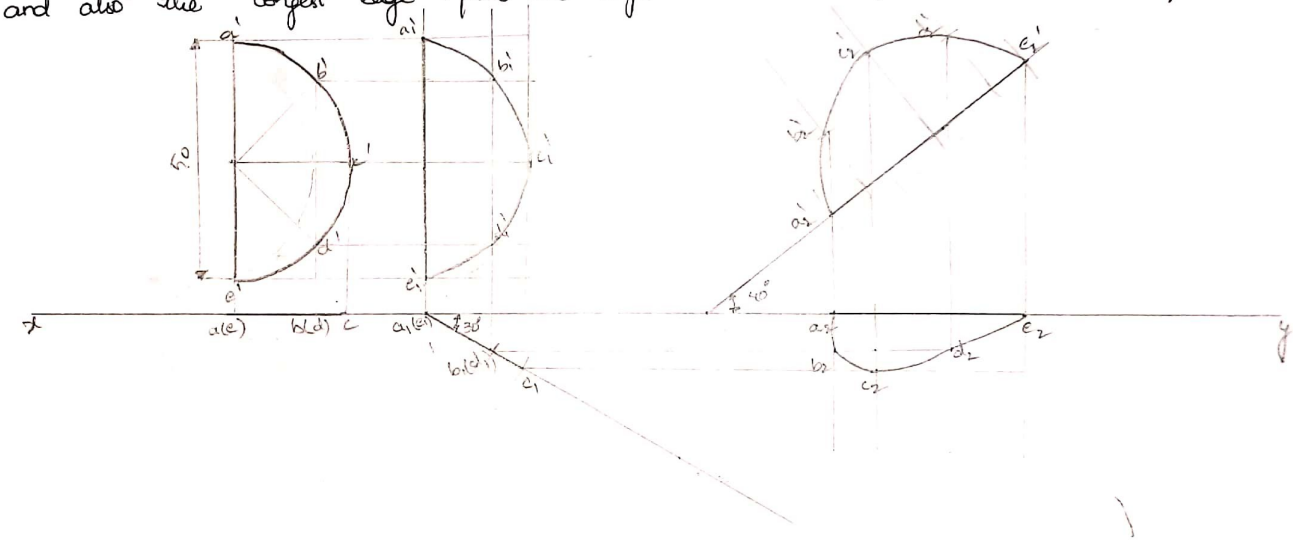
Longest side is ∥el to V.P,
⊥ar to H.P

D plane is resting on H.P with vertical edge / longest side.

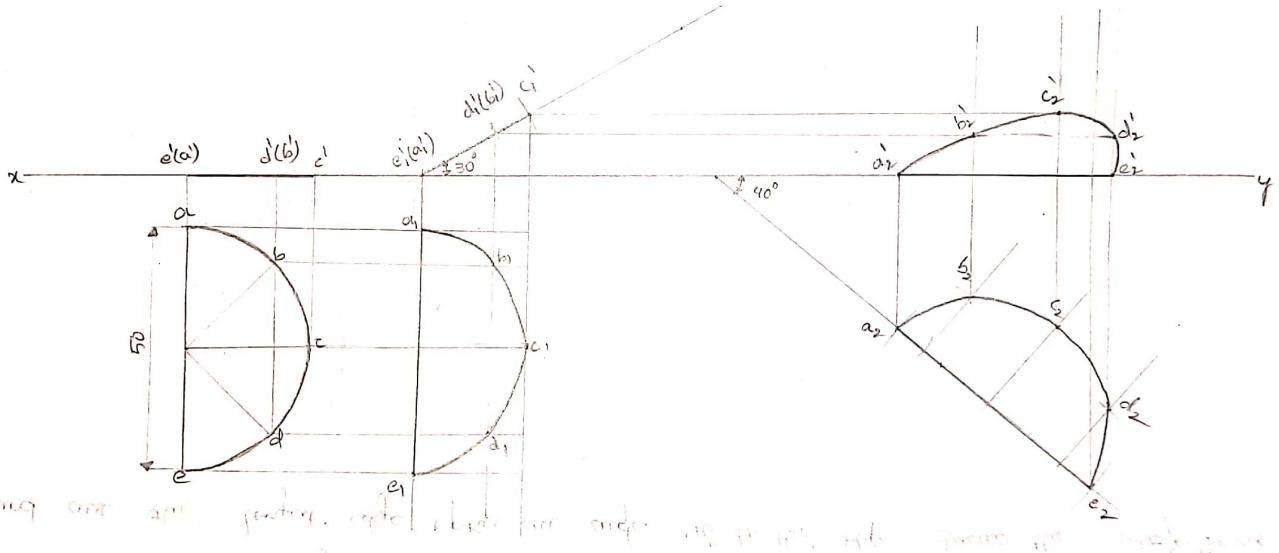


Longest side is ∥el to H.P, ⊥ar to V.P

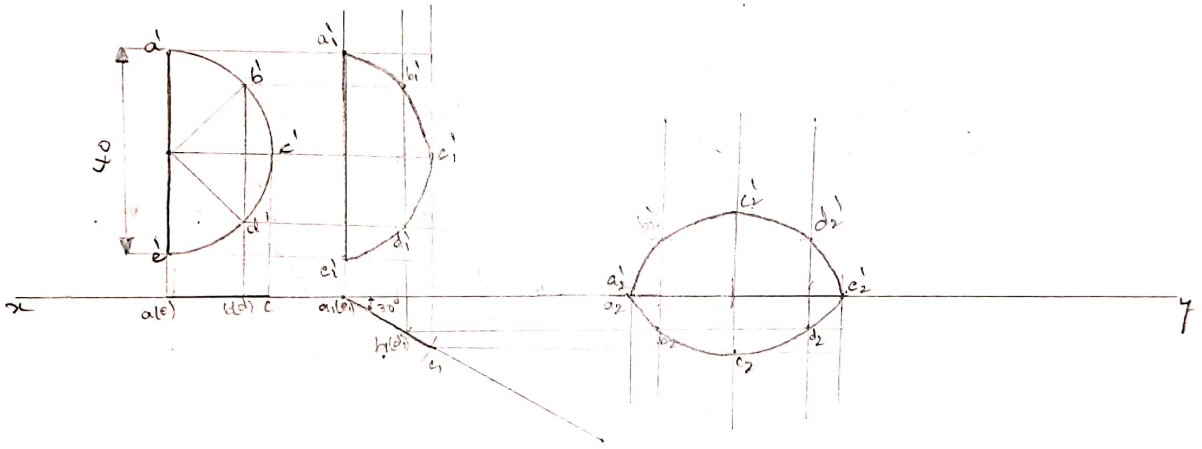
1, A semi-circular lamina having 50mm dia is lying on V.P and the surface is ||el to V.P and ⊥ar to H.P (Longest edge is ||el to V.P, ⊥ar to H.P). The surface makes an angle 30° to the V.P and also the longest edge makes an angle 40° to the H.P. Draw the projections.



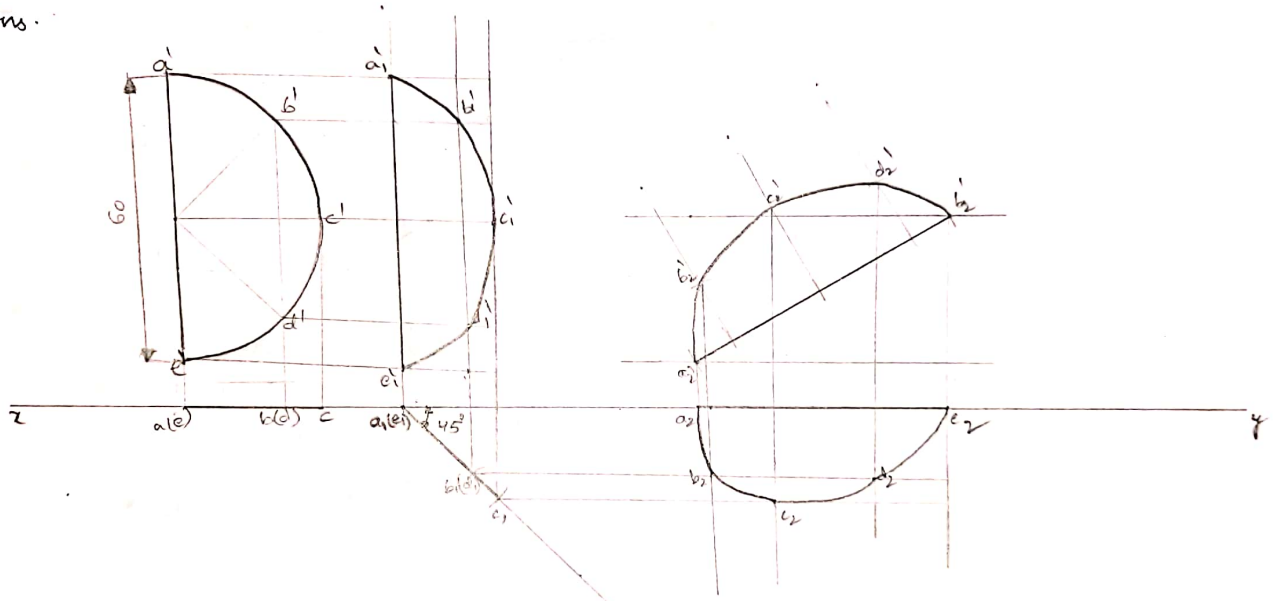
2) A semi circular lamina having 50mm dia is lying on H.P and the surface is ⊥el to H.P and ⊥ar to V.P (longest edge is ⊥el to H.P and ⊥ar to V.P). The surface makes an angle 30° to the H.P and also the longest edge makes an angle 45° to the V.P. Draw the projections.



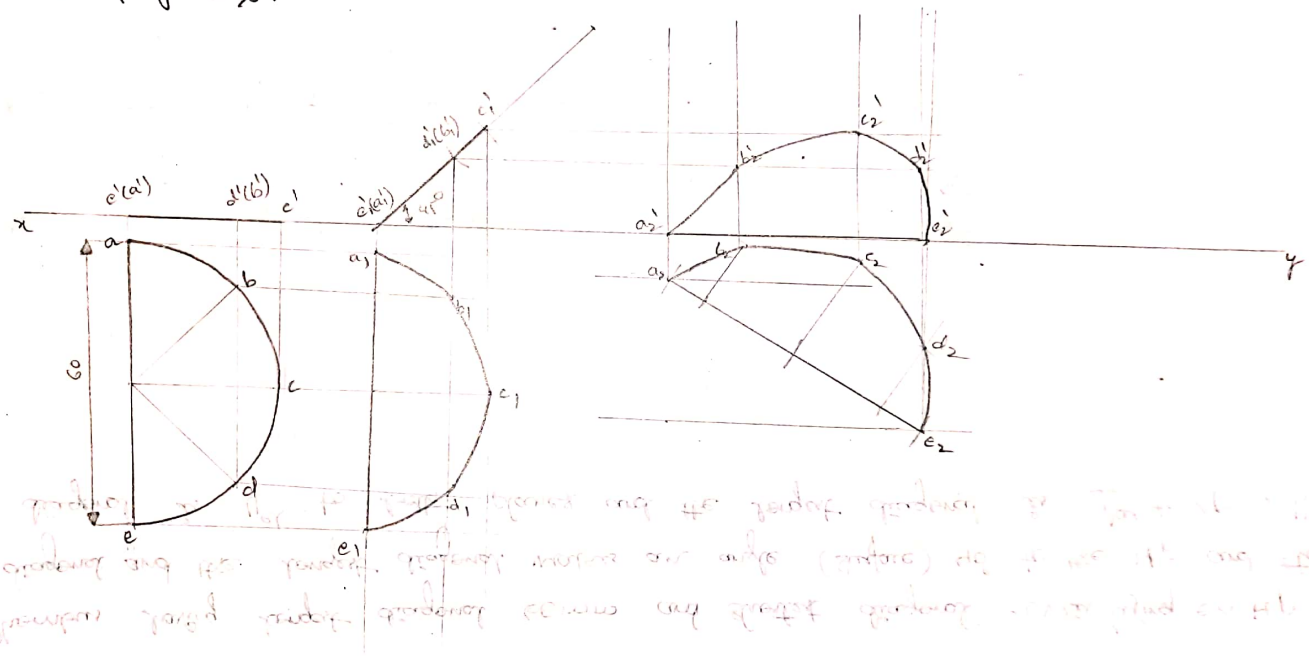
3) A Semi circular lamina having negligible thickness with 20 mms radius is lying on v.p with the longest side - Surface makes an angle 30° to the v.p and the longest edges lying on both H.p and v.p - the longest side 11cl to both H.p and v.p



1 A thin Semi circular having 60mm longest side is lying on VP. The surface makes an angle 45° to the VP and the longest edge ends 10mm above HP and 40mm above HP - Draw the projections.

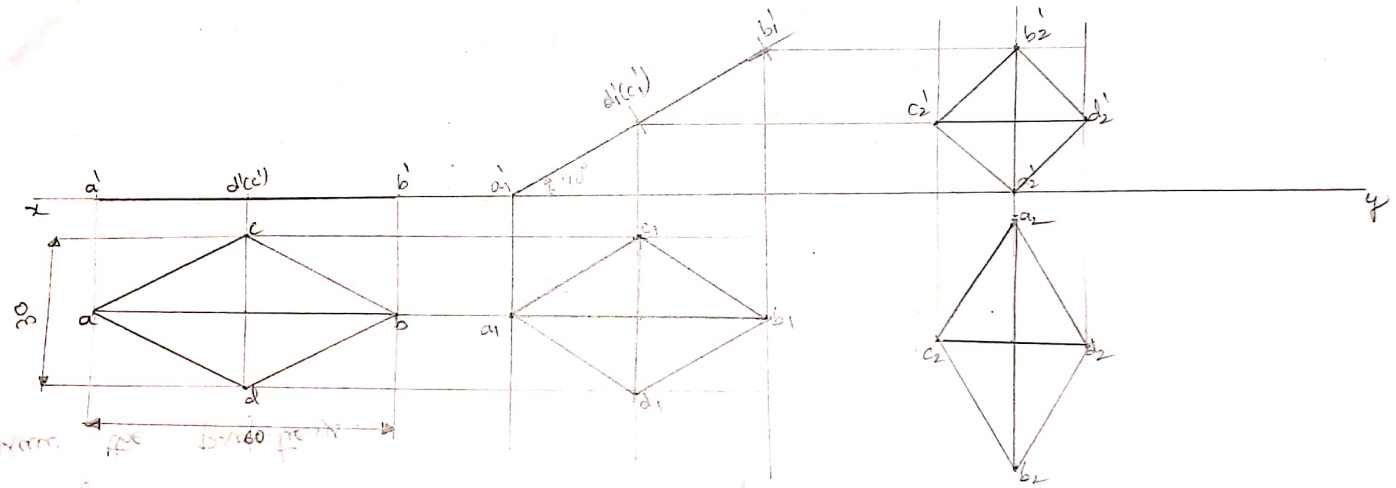


5, A thin Semi circular ~~sa~~ having 60mm longest side is lying on H.P - the surface makes an angle 45° to the V.P and the longest edge ends 10mm above (below) H.P and 40mm above (below) H.P. Draw the projections.

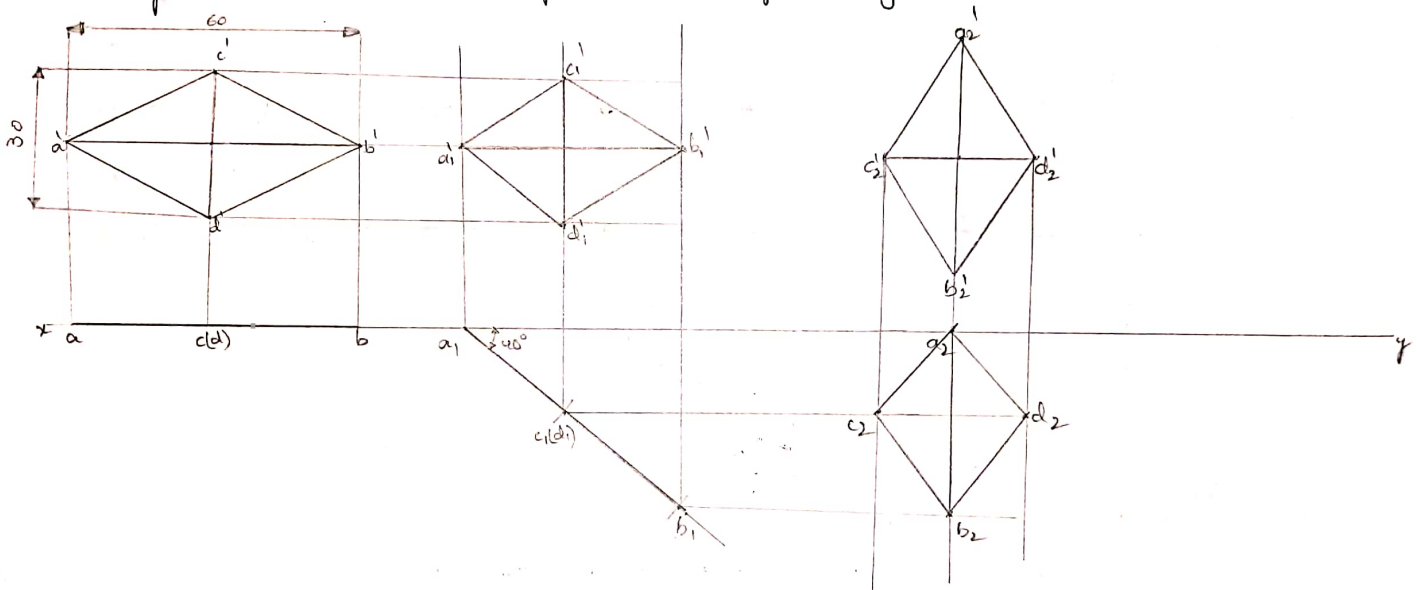


Rhombus

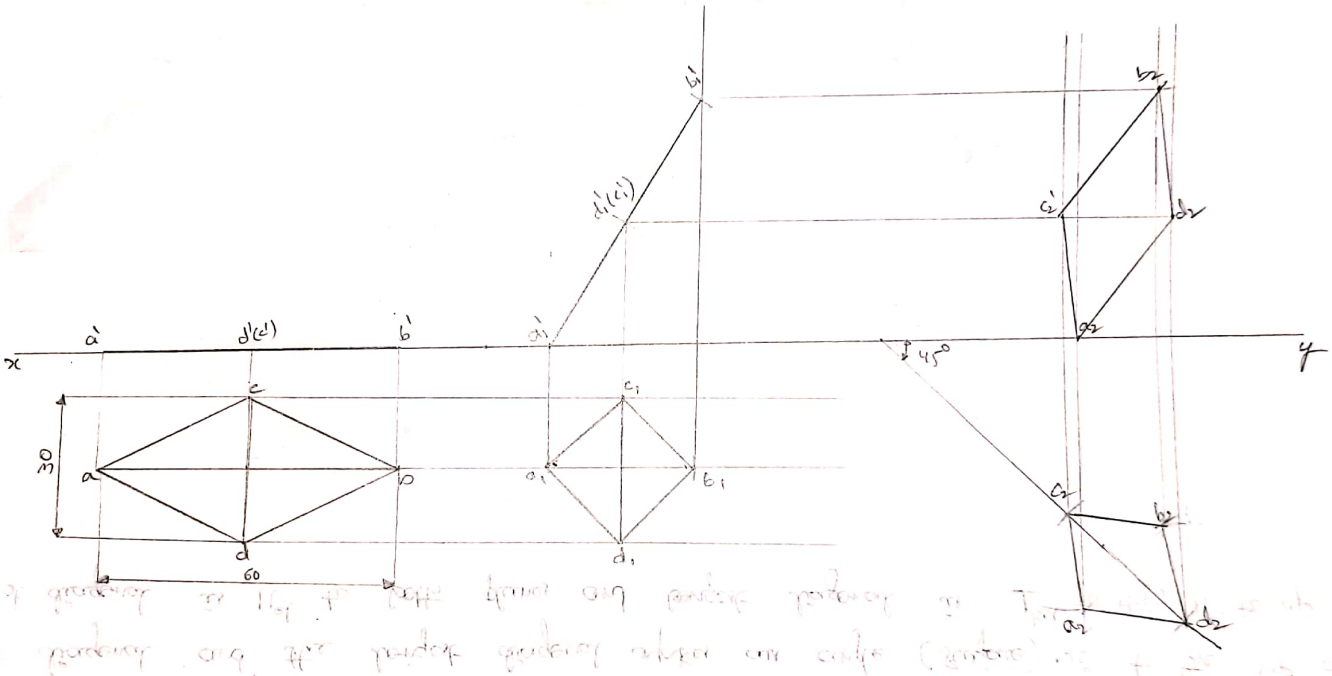
b) A Rhombus having longest diagonal 60mm and shortest diagonal 30mm is lying on H.P with its Longest diagonal and the longest diagonal makes an angle (Surface) 40° to the H.P and the Shortest diagonal is ⊥ᵉˡ to both planes and the longest diagonal is ⊥ᵃʳ to V.P ; ∥ᵉˡ to H.P



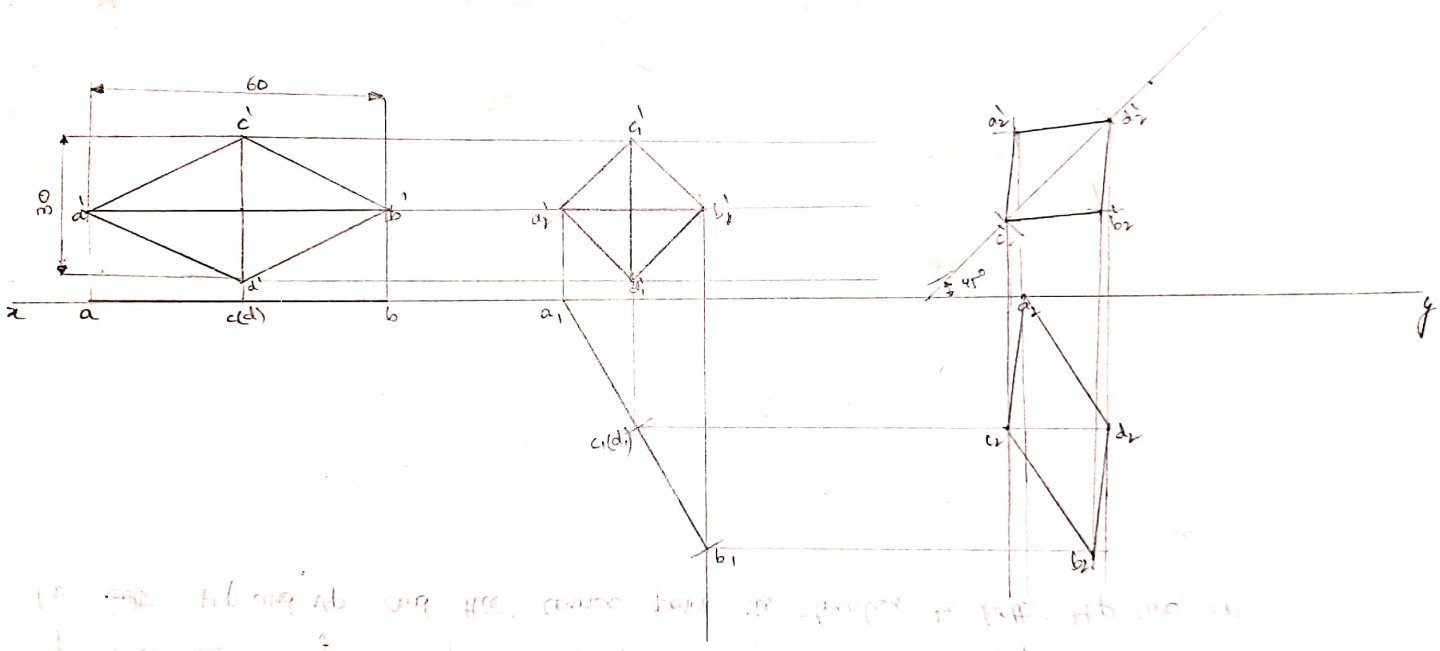
2) A Rhombus having longest diagonal 60mm and shortest diagonal 30mm is lying on V.P with the longest diagonal and the longest diagonal makes an angle (Surface) 40° to the VP and the Shortest diagonal is ll^el to both planes and longest diagonal is ⊥^lar to H.P, ll^el to V.P.



3) A Rhombus having 60mm longest diagonal and 30mm shortest diagonal is lying on H.P. The top view appears as a square and the diagonal makes an angle 45° to the V.P.



4) A Rhombus having 60mm longest diagonal and 30mm shortest diagonal is lying on V.P. The front view appears as a square and the diagonal inclines an angle 45° to the H.P. Draw its projections.

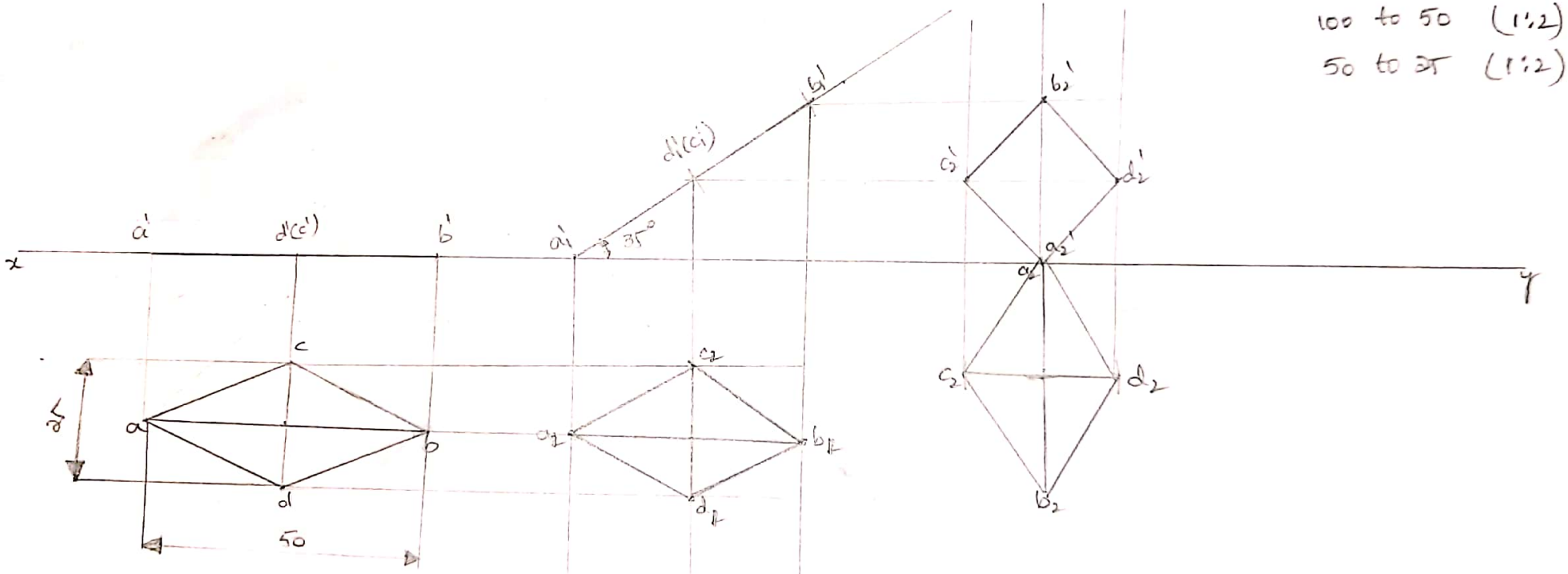


5) A Rhombus having 100mm longest diagonal 50mm shortest diagonal is lying on H.P horizontally and the longest diagonal makes an angle 35° to the H.P. The shortest diagonal is ⊥el to both H.P and V.P and the corner point is touches to both H.P and V.P.

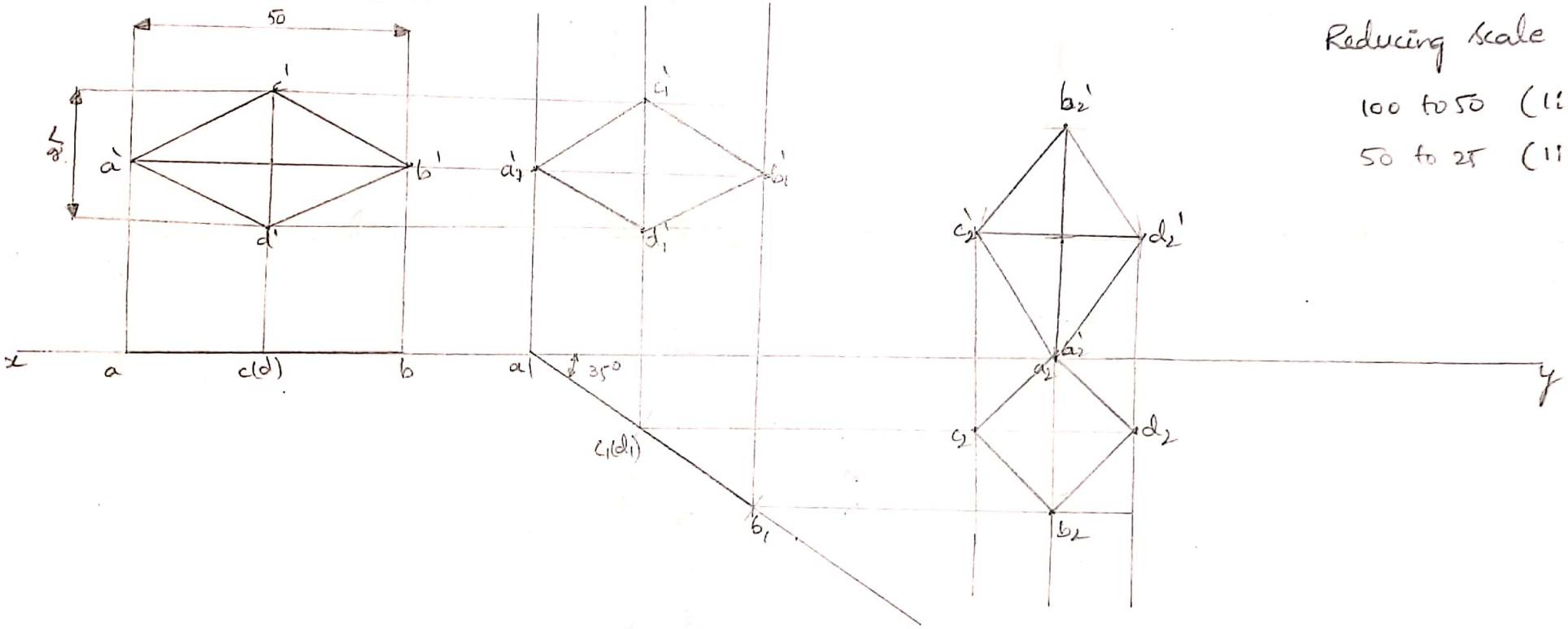
reducing scale

100 to 50 (1:2)

50 to 25 (1:2)



6, A Rhombus having 100 mm longest diagonal 50mm shortest diagonal is lying on V.P. Horizontally and the longest diagonal makes an angle 35° to the V.P. The shortest diagonal is ⊥ᵈˡ to both H.P and V.P and the corner point is touches to both H.P and V.P.



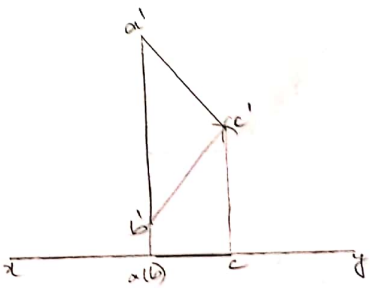
Reducing scale

100 to 50 (1:2)

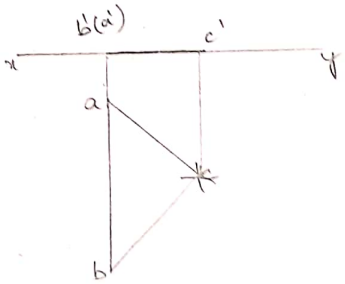
50 to 25 (1:2)

Triangles

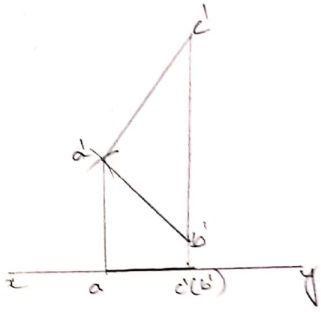
Δplane is resting on V.P with side / edge.



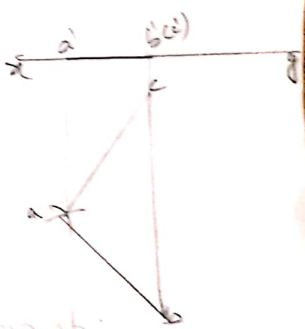
Δplane is resting on H.P with side/edge



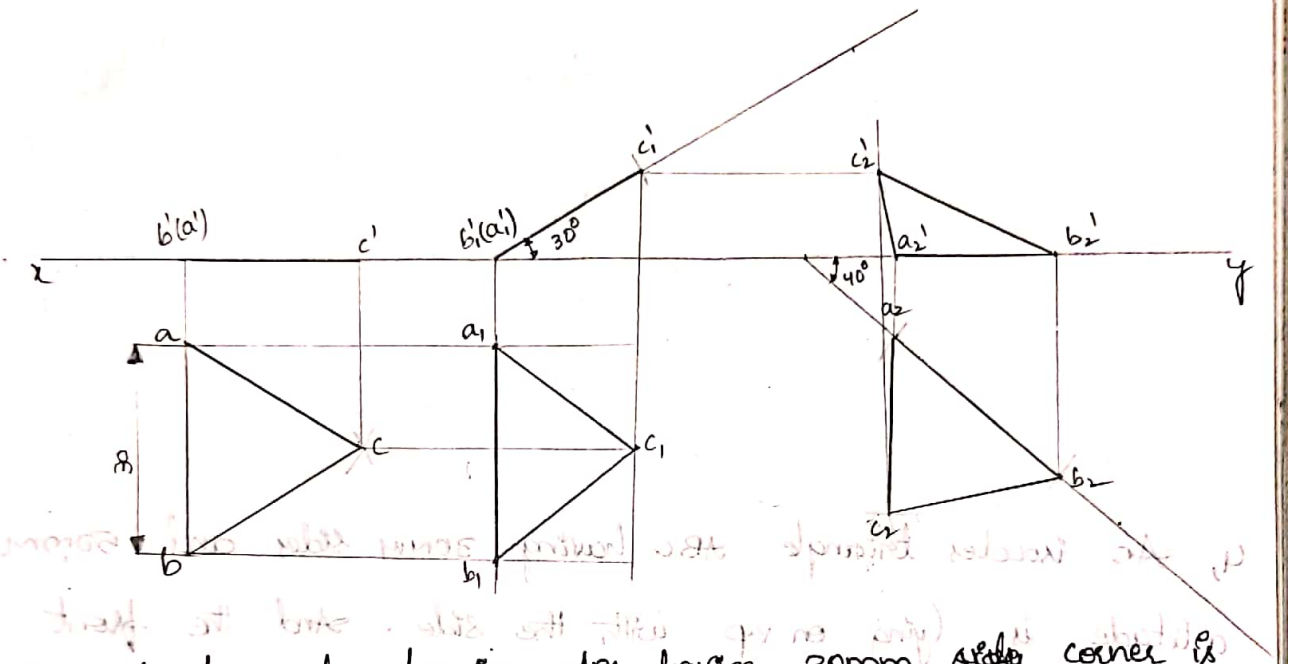
Δplane is resting on V.P with corner



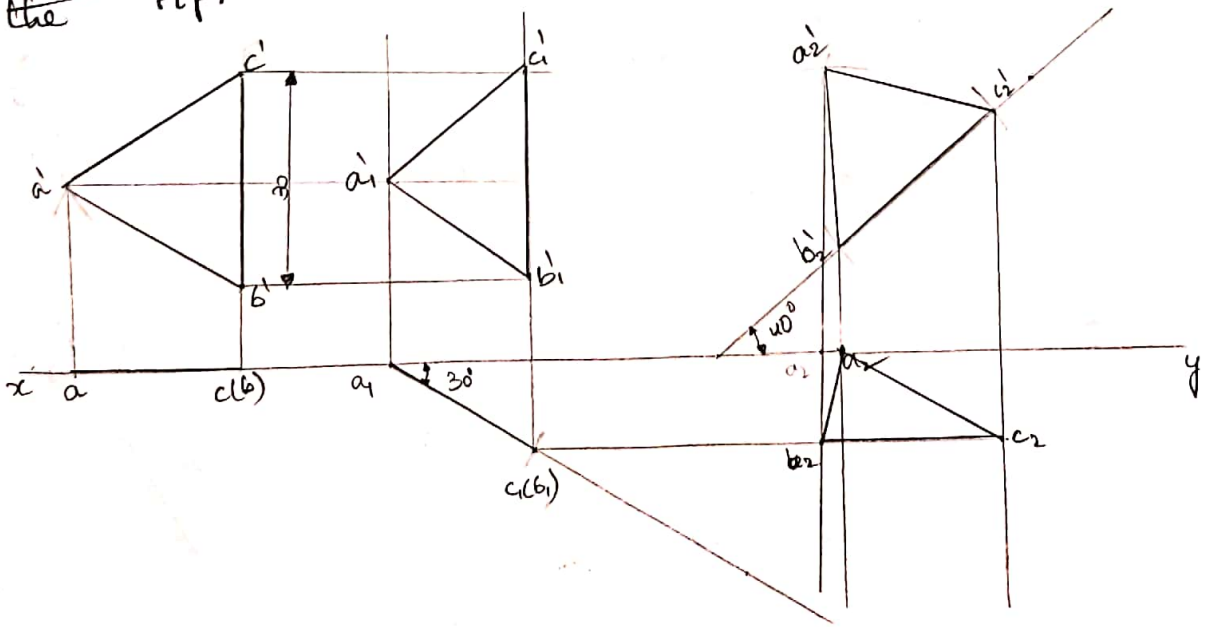
Δplane is resting on H.P with corner.



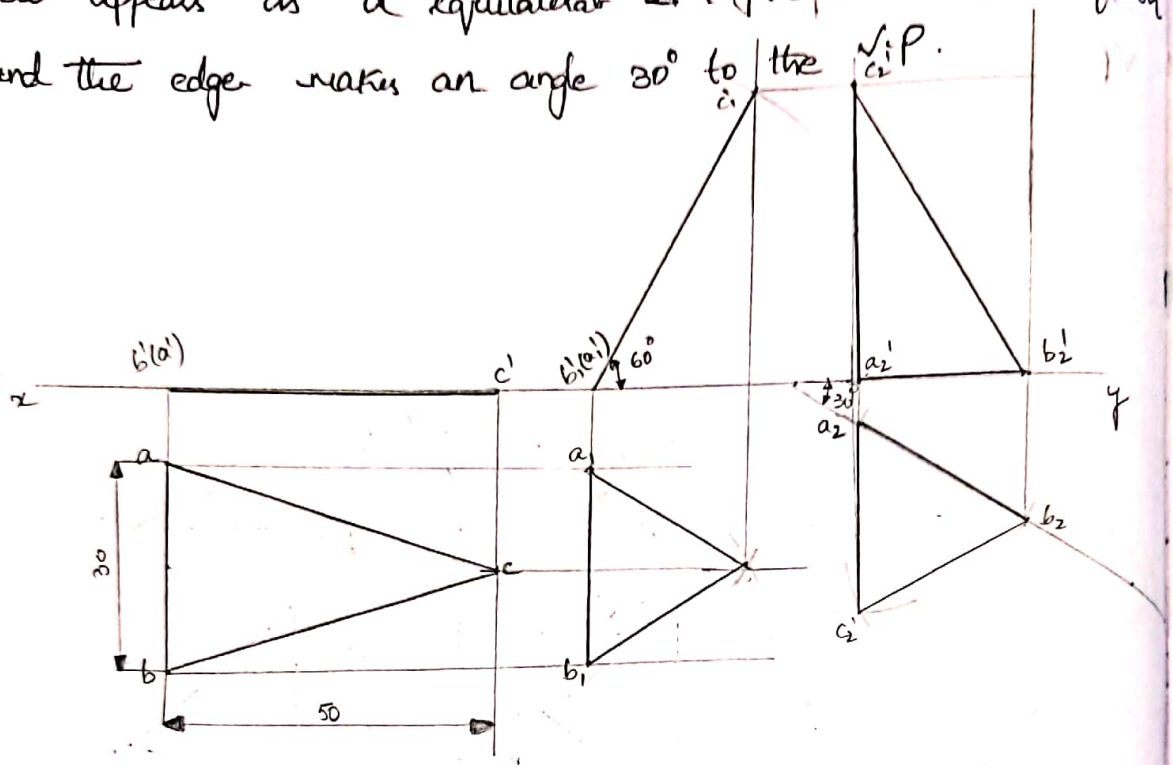
1, A triangular lamina ABC having 30mm sides is lying on Hp with the side and the surface makes an angle 30° to the Hp. And the edge makes an angle 40° to the Vp.



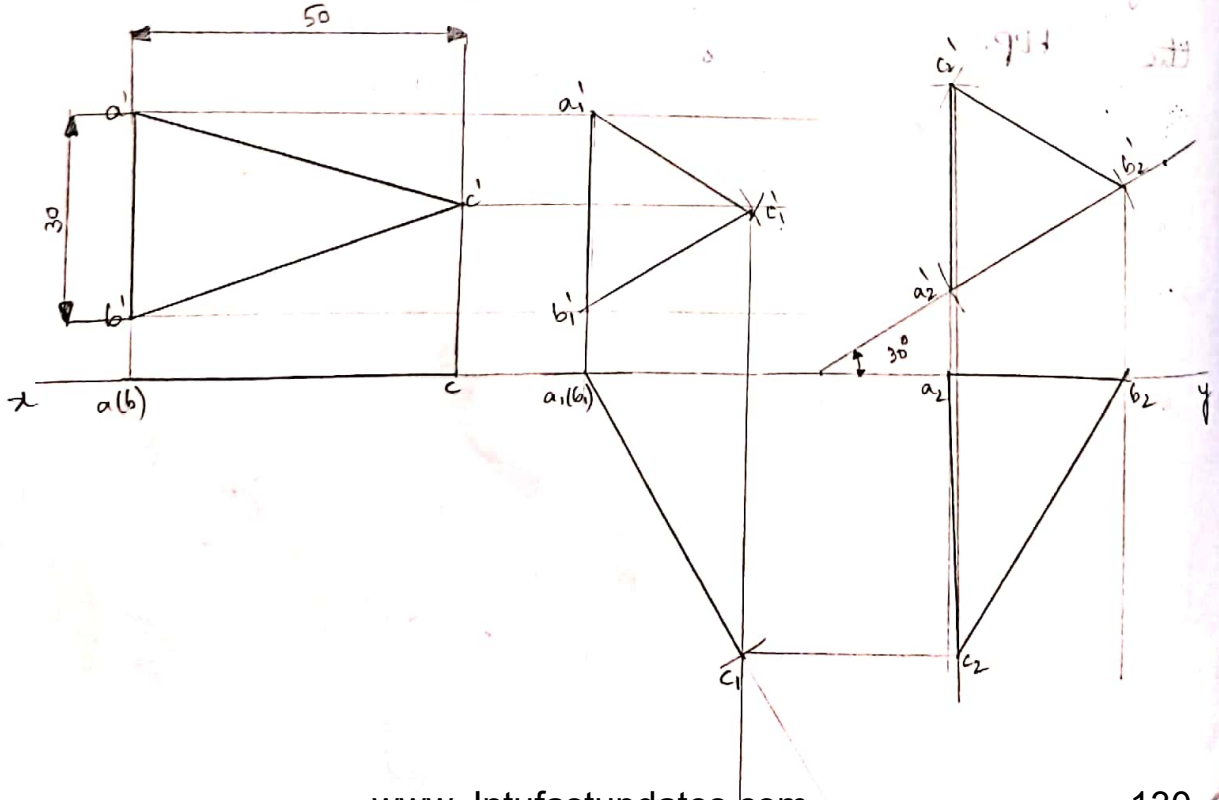
2, A triangular lamina ABC having 30mm ~~side~~ corner is lying on V.P with the side and the surface makes an angle 30° to the V.P. And the edge makes an angle 40° to the H.P.



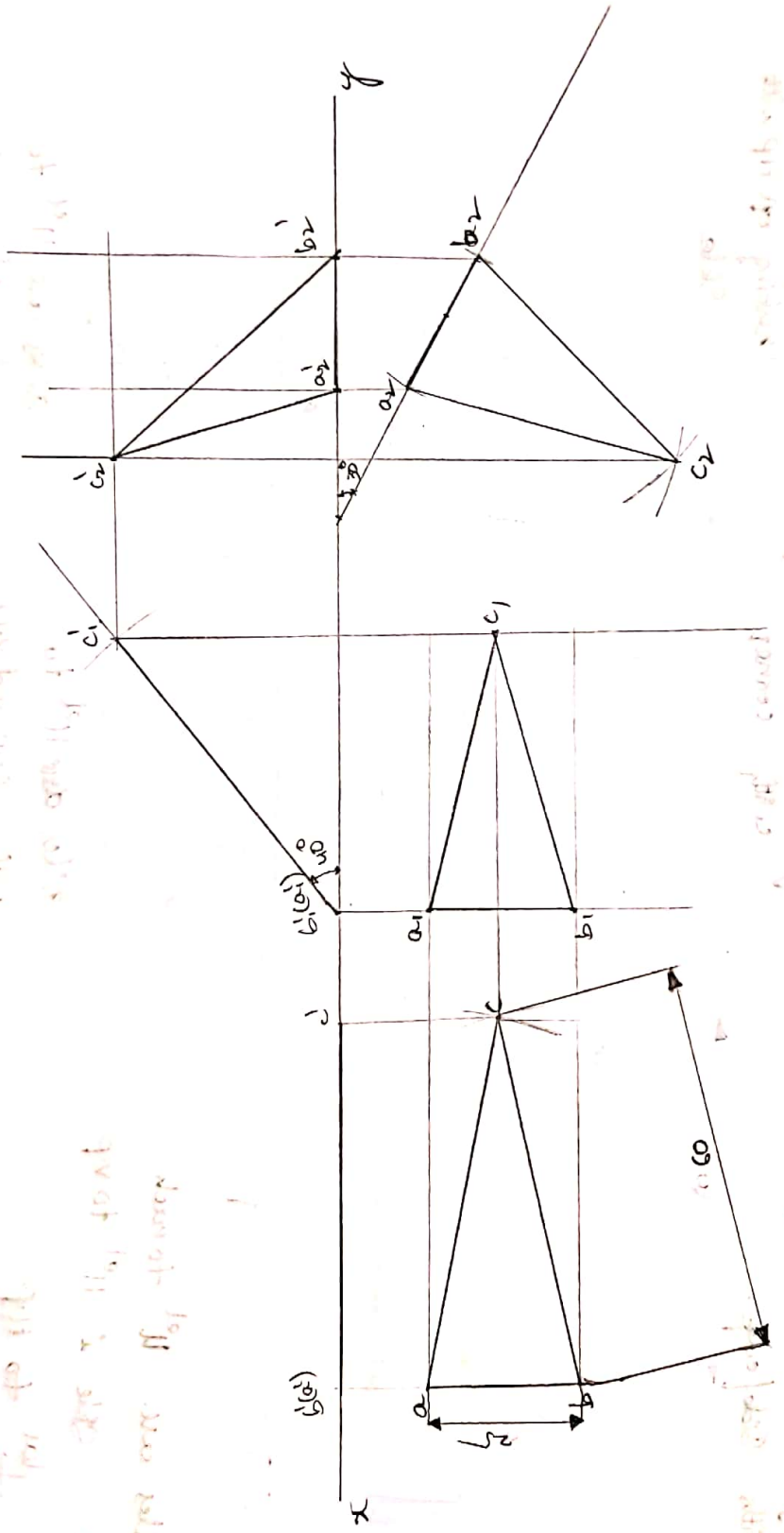
3, An isoceles triangle ABC, having 30mm sides and 50mm altitude is lying on H.P with the side. And the top view appears as a equilateral Δ^{le}. find out H.P inclination and the edge makes an angle 30° to the V.P.



4, An isoceles triangle ABC having 30mm sides and 50mm altitude is lying on V.P with the side. And the front view appears as a equilateral Δ^{le}. find out V.P Inclination and the edge makes an angle 30° to the H.P.

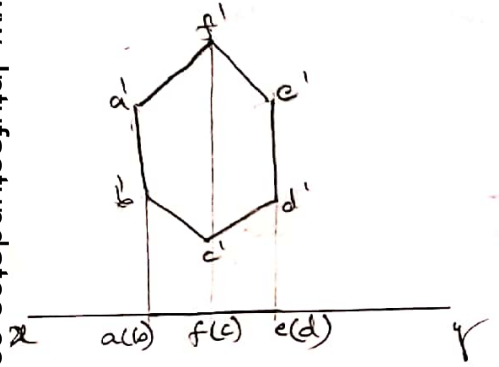


4, A isoceles triangle having 25mm sides AB and AC 60mm side is lying on HP with the shortest side and the surface makes an angle 40° to the HP and the edge AB makes an angle 30° to the VP. Draw the projection.



Hexagon

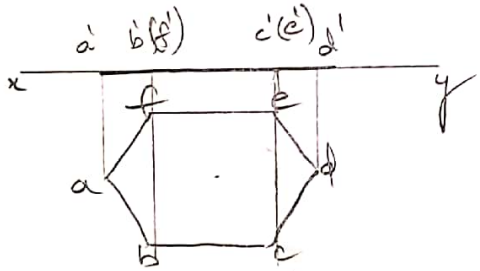
Hexagonal plane is resting on V.P with side/edge.



Sides are ||el to each other. Side is ||el to V.P

⊥lar to H.P

Hexagonal plane is resting on H.P with corner

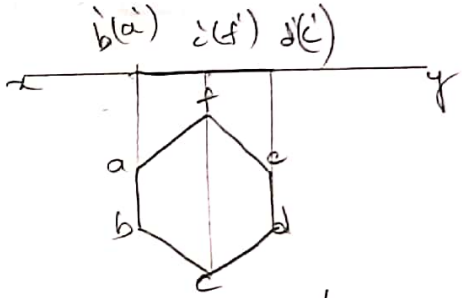


Sides are ||el to both H.P and V.P

corner is ||el to H.P

⊥lar to V.P

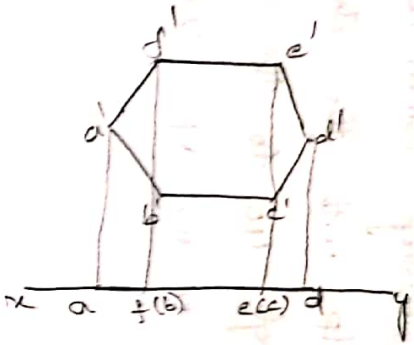
Hexagonal plane is resting on H.P with side



Sides are ||el to each other. Side is ||el to H.P,

⊥lar to V.P

Hexagonal plane is resting on V.P with corner.

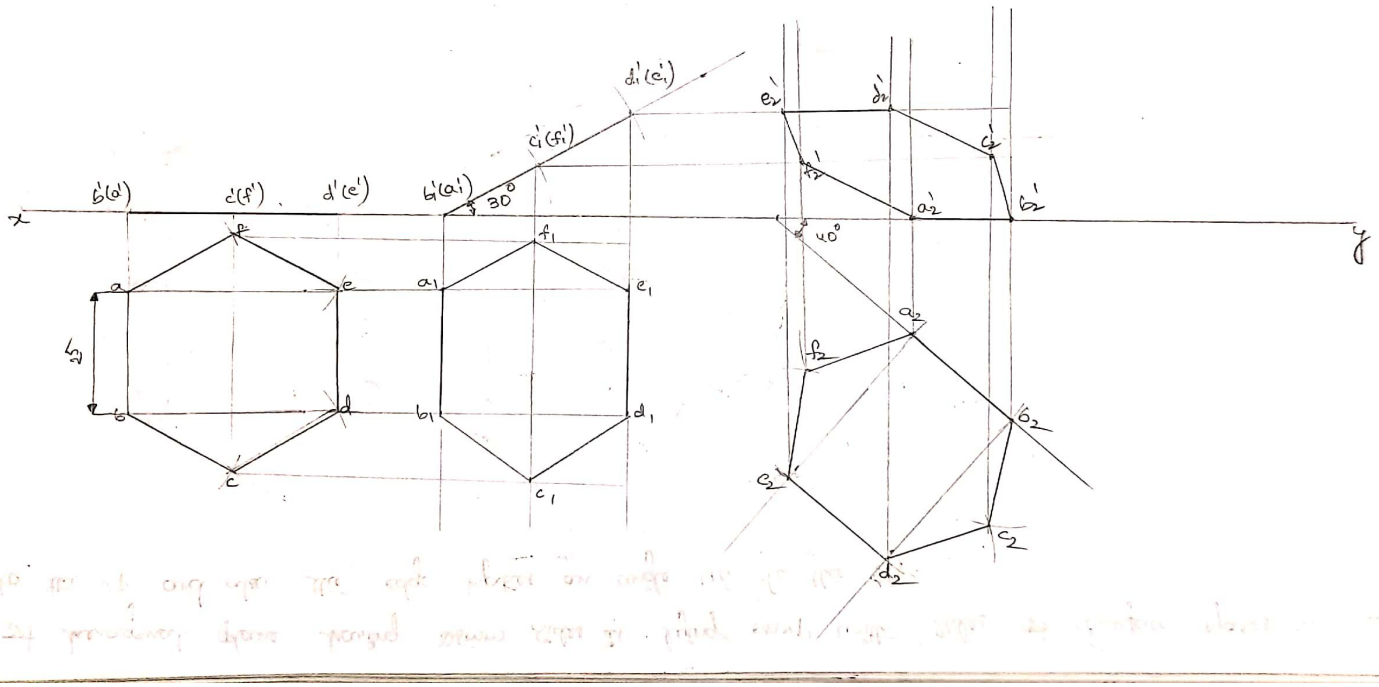


Sides are ||el to both H.P and V.P

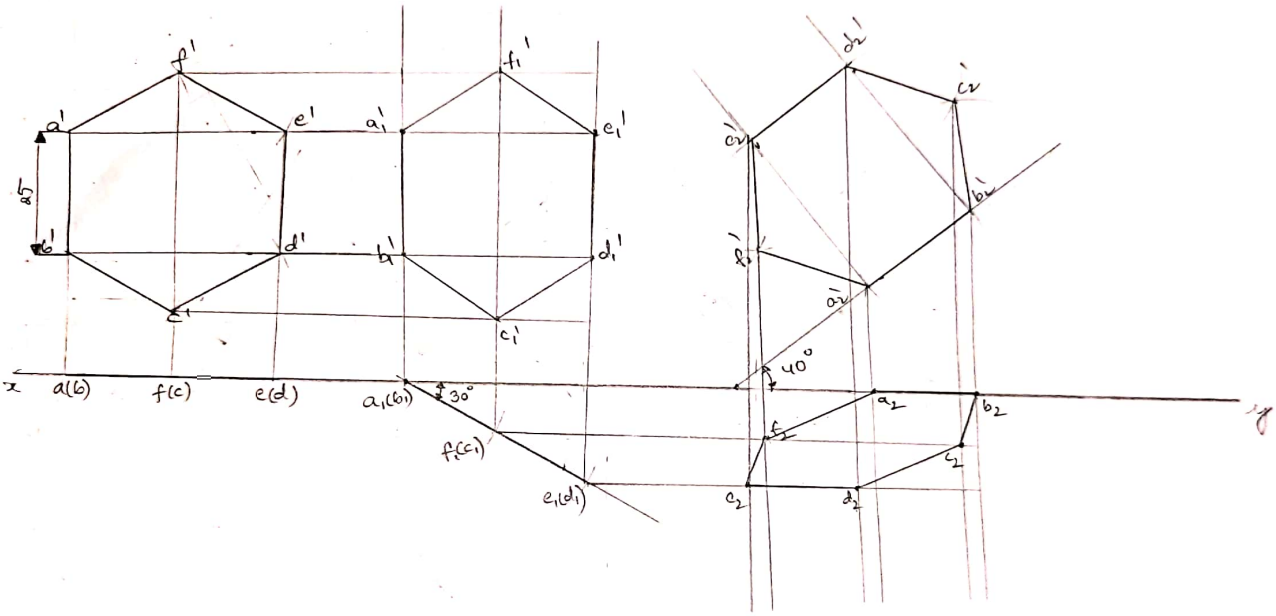
corner is ||el to H.P

⊥lar to V.P.

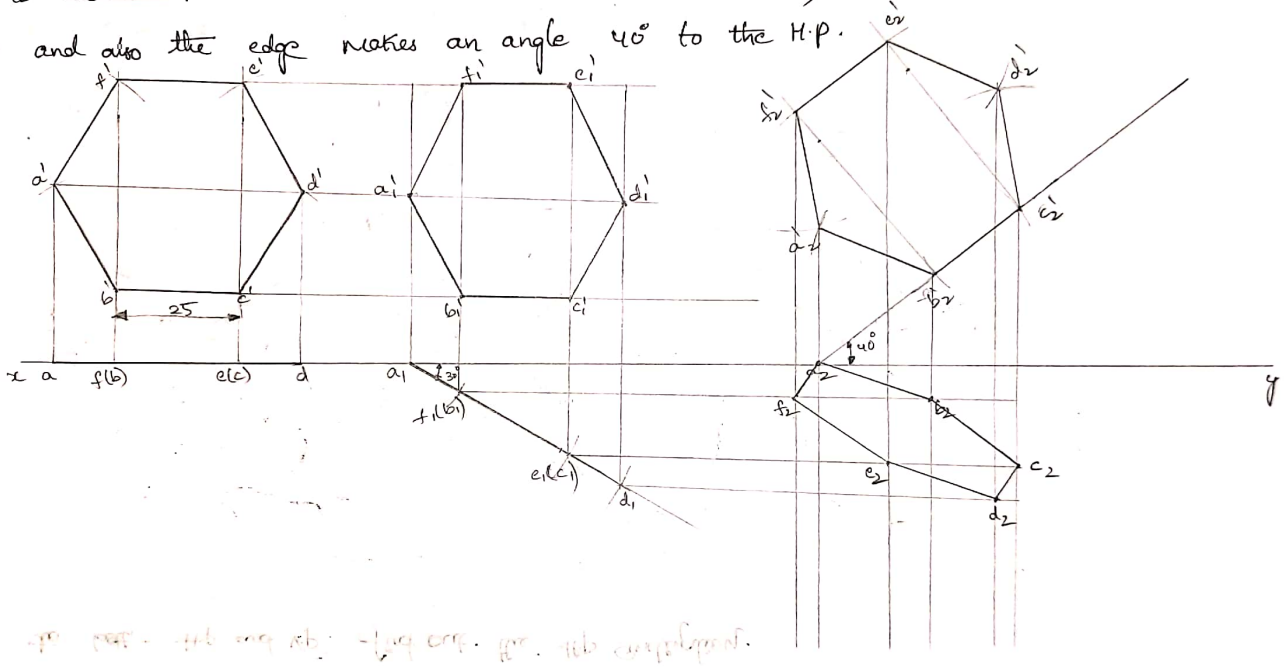
1. A Hexagonal plane having 25mm sides is lying on H.P with side. [The both sides are 11° to each other and the side is 11° to H.P, 1 to V.P] They the surface makes an angle 30° to the H.P and also the edge makes an angle 40° to the V.P (The diagonal makes an angle 40° to the V.P)



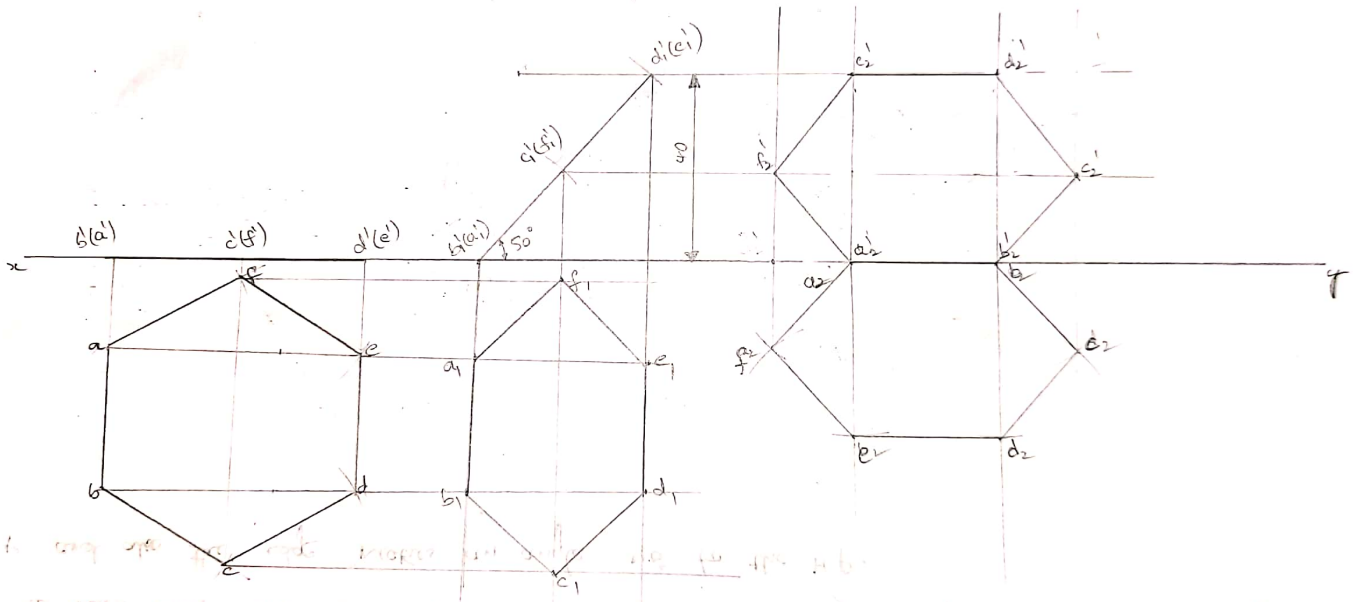
A hexagonal plane having 25mm sides is lying on VP with sides. ~~Surface~~ Surface makes an angle 30° to the VP and also the edge makes an angle 40° to the HP.



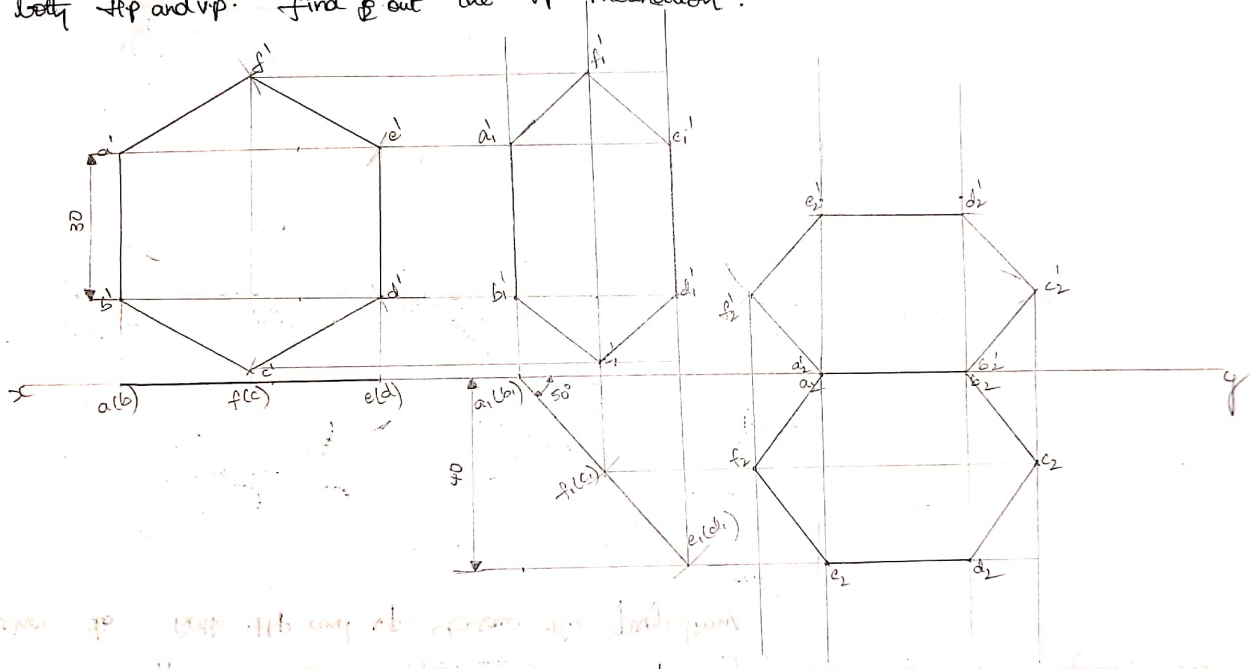
3) ~~A~~ Hexagonal plane having 25mm sides is lying on H.P with corner. ~~[the both sides are wel to each other and corner is ⊥el to H.P, and ⊥lar to H.P)~~. Surface makes an angle 30° to the V.P and also the edge makes an angle 40° to the H.P.



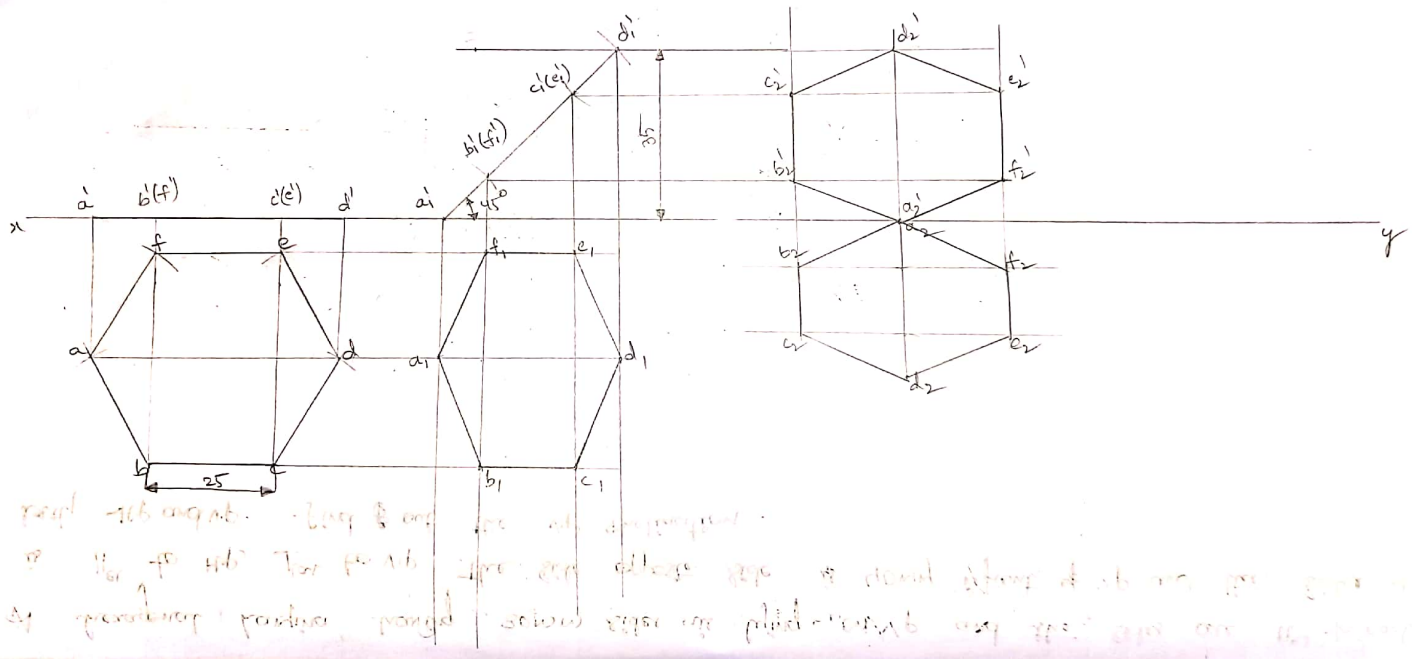
4) A Hexagonal lamina having 30 mm sides is lying on H.P and the sides are parallel to each other side is parallel to Hp, ⊥ar to V.P. the side opp side is 30mm above H.P and the side is touches to both Hp and Vp. find out the Hp projection.



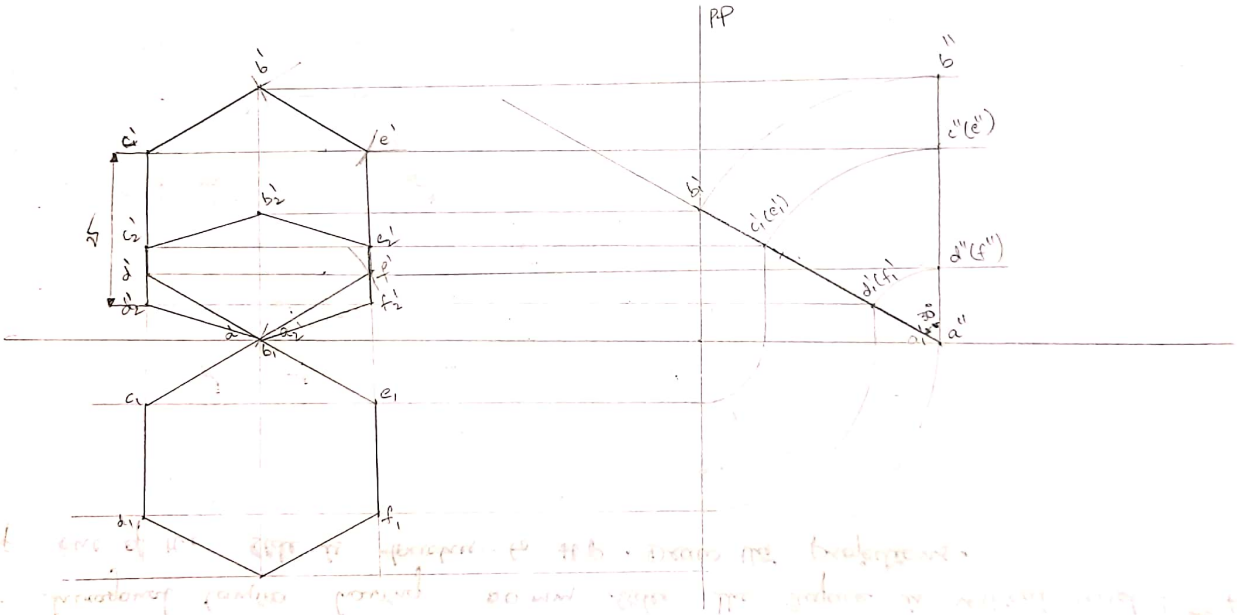
5) A hexagonal Lamina having 30mm sides is lying on V.P and the sides are ||el to each other. Side is ||el to H.P, ⊥ar to V.P. The side opposite side is 40mm infront of V.P and the sides is touches to both H.P and V.P. find out the V.P Inclination.



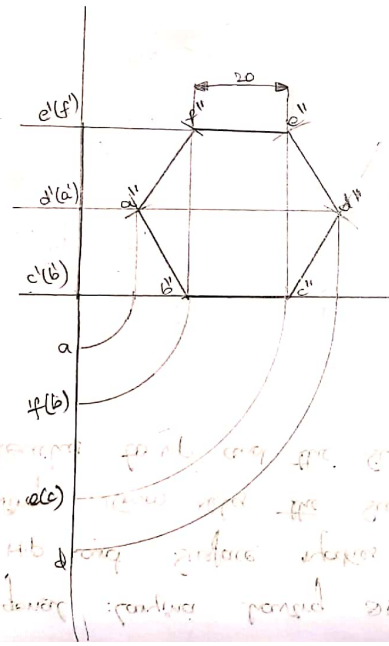
6) A Hexagonal plane having negligible thickness of 25mm sides is lying on ground with corner: The corner opposite corner is 35mm above Hp. Find out the Hp Inclination. The corner A is touches to both Hp and Vp. Draw the projections.



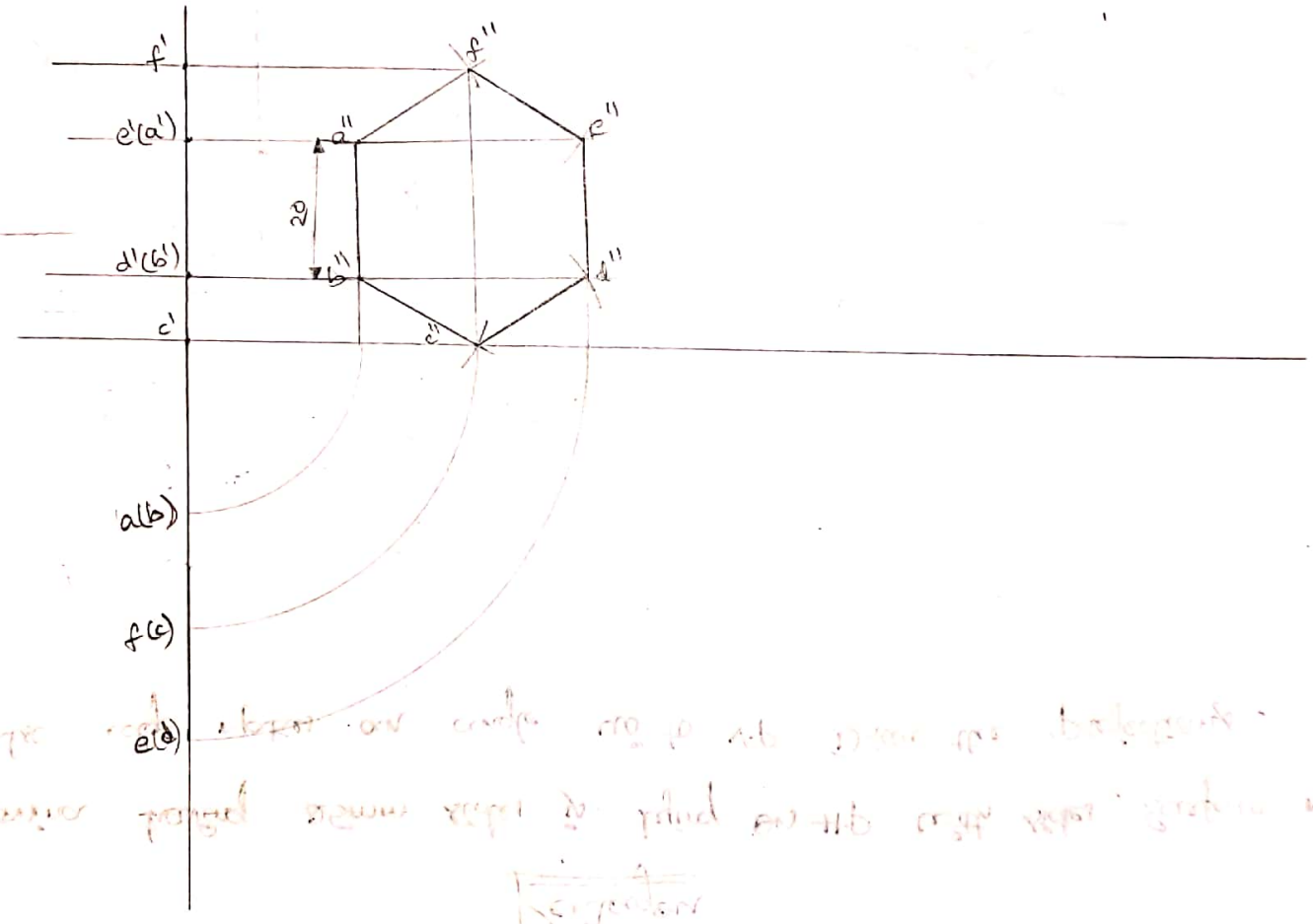
7) A hexagonal lamina having 25mm sides. The surface is vertical one of the corner point is touches to H.P and surface makes an angle 30° to H.P and also 60° to V.P. (OR) A hexagonal lamina having 25mm sides the surface is ⊥ar to V.P, ⊥ar to H.P, the corner A is touches to H.P and D is touches to V.P and the surface makes an angle 30° to H.P and also 60° to V.P.



Eg: A hexagonal lamina having 20 mm sides the surface is vertical and ⊥ar to both H.P and V.P one of the side is touches to H.P. Draw the projections.

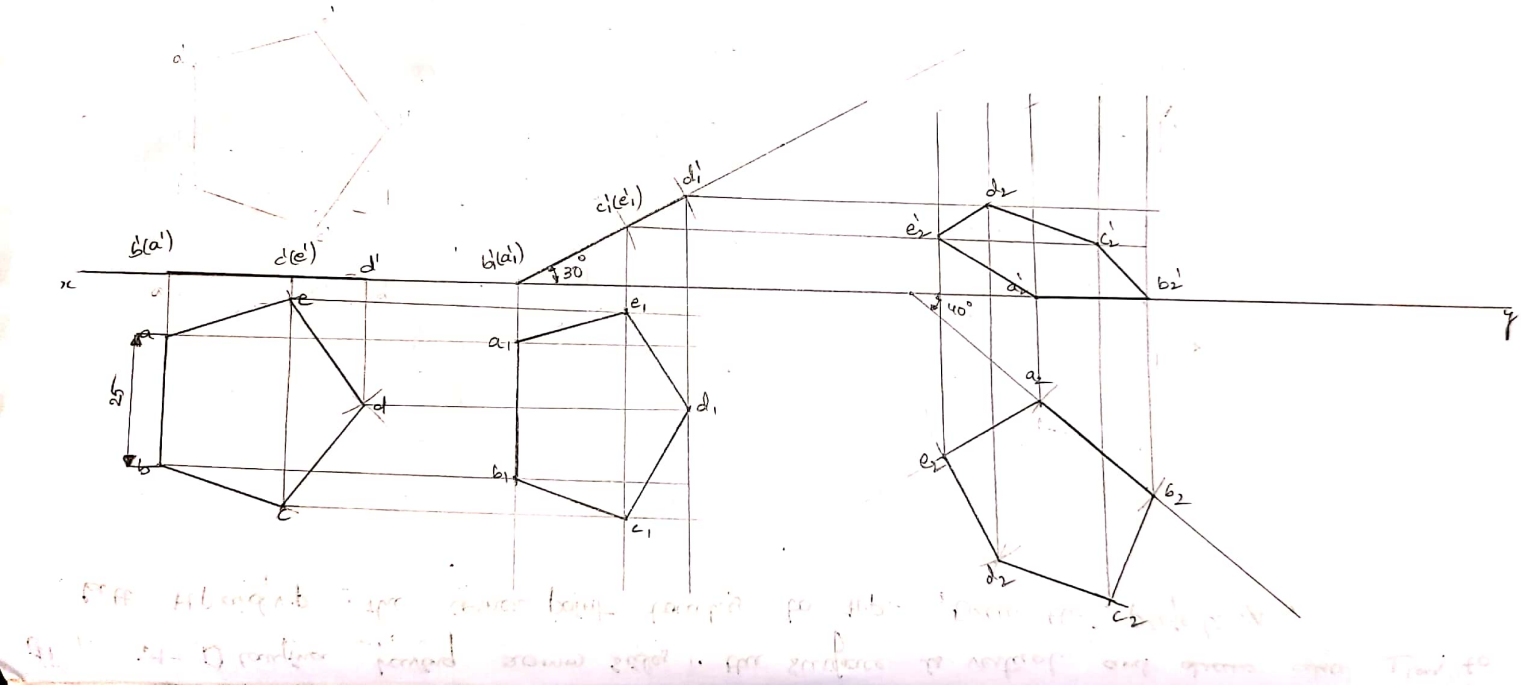


ii) A □ lamina having 20mm sides. the surface is vertical and also ⊥ar to both H.P and V.P. the corner point touches to H.P. Draw the projections.

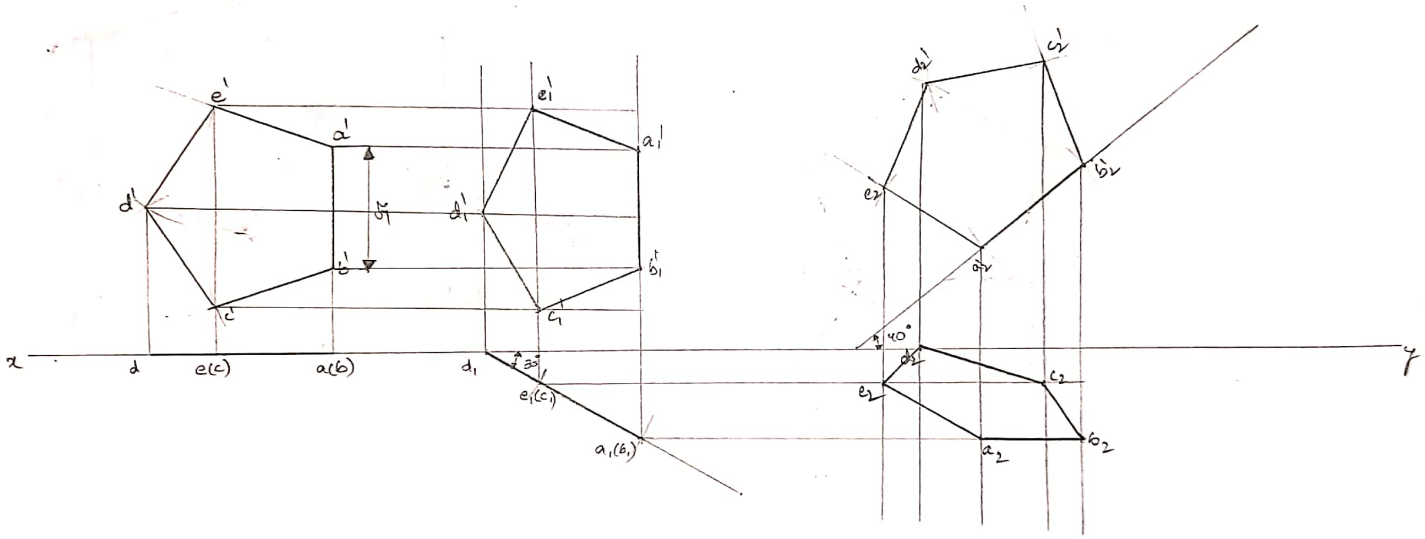


Pentagon

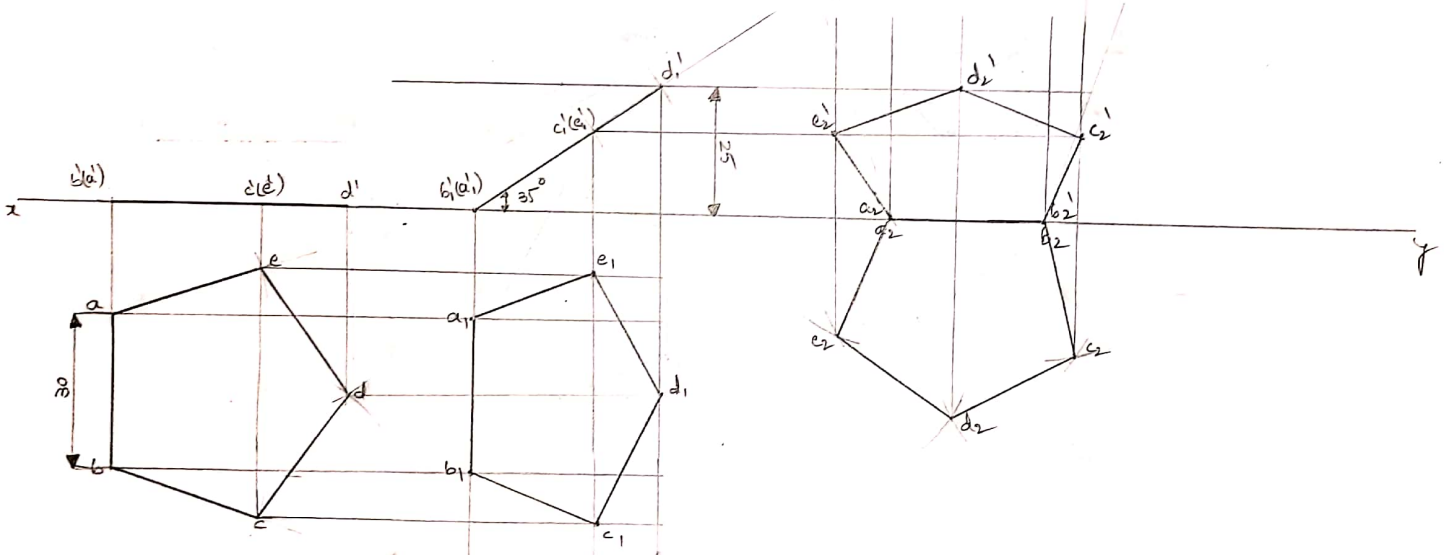
1, → A pentagonal lamina having 25mm sides is lying on H.P with sides, Surface makes an angle 30° to the H.P & also edge makes an angle 40° to V.P. Draw the projections.



2) A pentagonal Lamina having 25mm corner is lying on vp with corner, Surface makes an angle 30° to the vp & also edge makes an angle 40° to the Hp. Draw the projections.



A pentagonal plane having negligible thickness is lying on H.P with side 30mm, the side opposite side corner is 25mm above H.P & the side is lying on both H.P and V.P. find out the H.P Inclination.



4, A pentagonal plane having negligible thickness is lying on Vp with corner 30mm, the side opposite corner is 25mm infront of Vp & the corner is lying on both Hp and Vp. Draw the Projections.