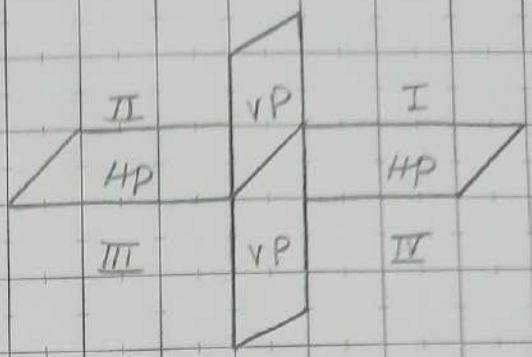
MODULE -01 : Introduction to Orthographic Engineering Drawing :-

→ Quadrants :



I st Quadrant → above HP, infront of VP

II nd Quadrant → above HP, behind VP

III rd Quadrant → below HP, behind VP

IV th Quadrant → below HP, infront VP

→ Positions of VP, HP, and FV and TV

I st Quadrant → X | VP / HP | FV / TV | Y

II nd Quadrant → X | HP / VP | TV / FV | Y

III rd Quadrant → X | HP / VP | TV / FV | Y

IV th Quadrant → X | VP / HP | FV / TV | Y

→ Positions for plotting

on HP → on XY

above HP → above XY

below HP → below XY

←→ Front view ←→

on VP → on XY

infront VP → below XY

behind VP → above XY

←→ Top view ←→

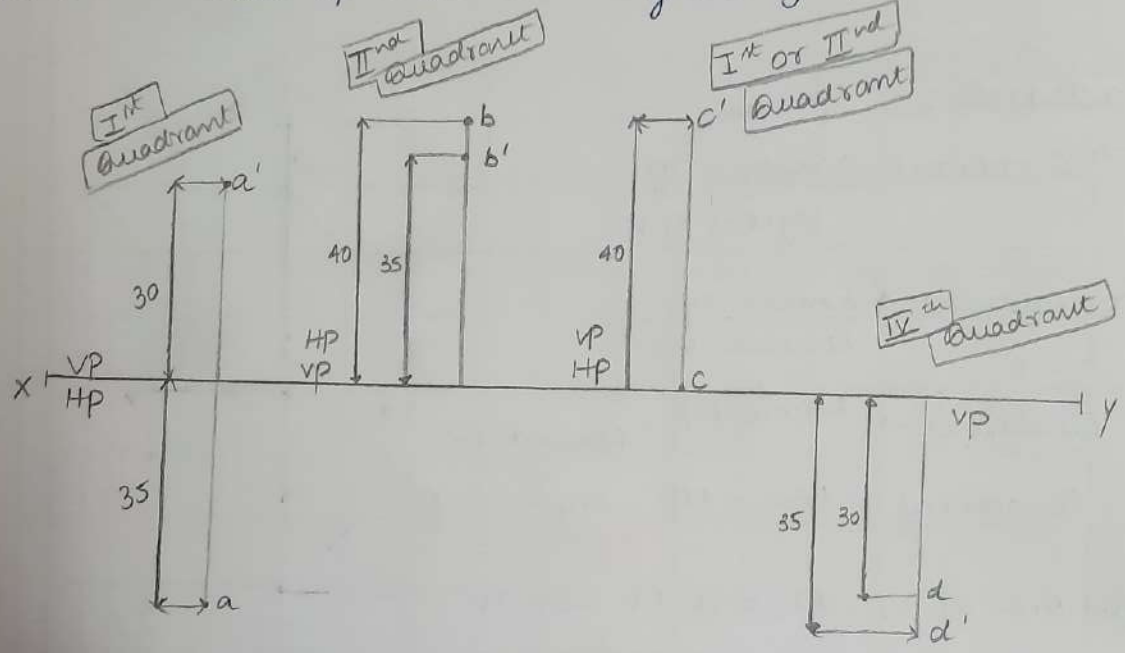
Q1) Draw the projections of the following points on the same xy line keeping convenient distance between each projection name the quadrants in which they line

(A) 30mm above Hp and 35mm infront of VP

(B) 35mm above Hp and 40mm behind VP

(C) 40mm above Hp and on VP

(D) 35mm below Hp and 30mm infront of VP

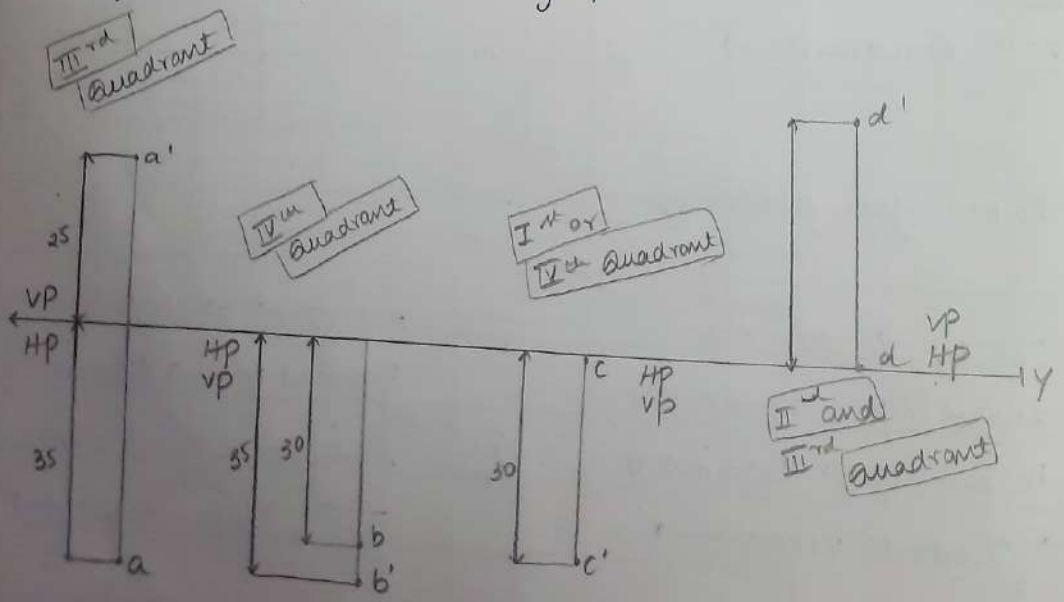


Q2) (E) 30mm below Hp and 25mm behind VP

(F) 35mm below Hp and 30mm infront of VP

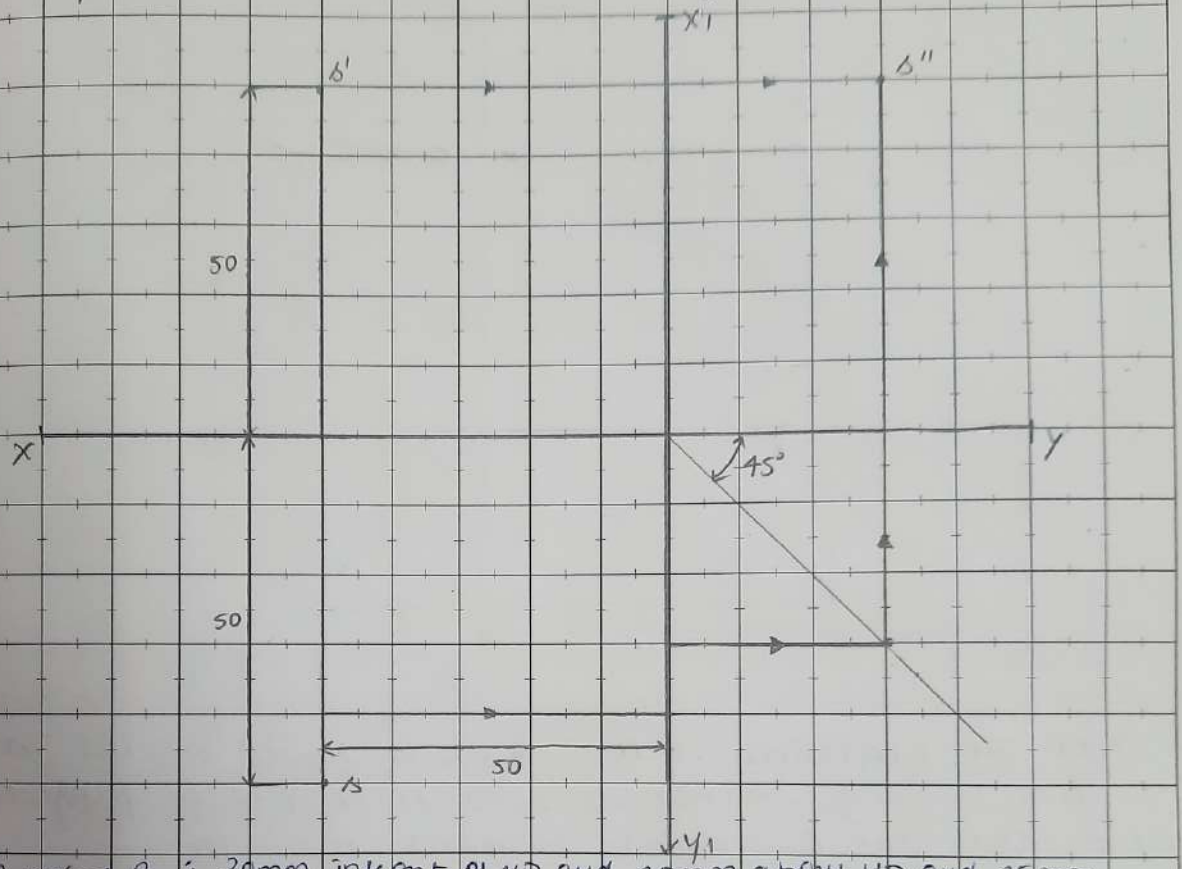
(G) on Hp and 30mm infront of VP

(H) on Hp and 35mm behind of VP

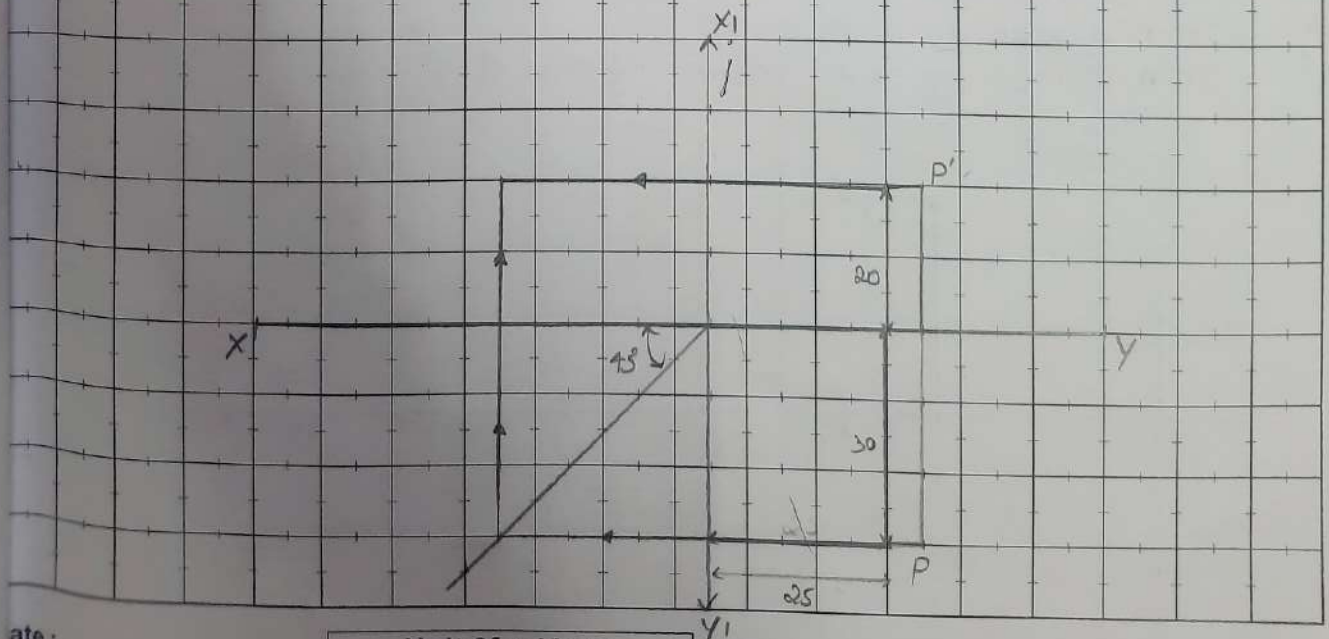


USN | | | | | | | | | | SUB. CODE | | | | | | | SEM. | | | SEM.SHEET No. | | of |

Q3) A point 'S' is in the first quadrant and equidistant of 50mm from the three principle planes draw the projection of the point draw all the three views of the point



Q4) A point B is 30mm infront of VP and 20mm above HP and 25mm infront stash, behind draw its projection and name the side view

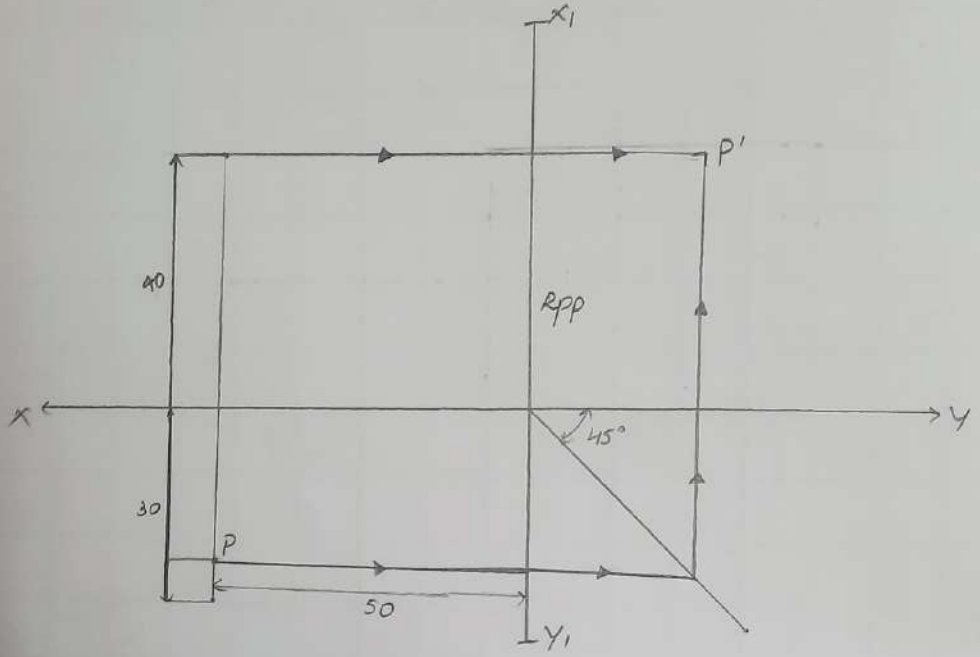


ate : .....

Unit 0f = 10mm

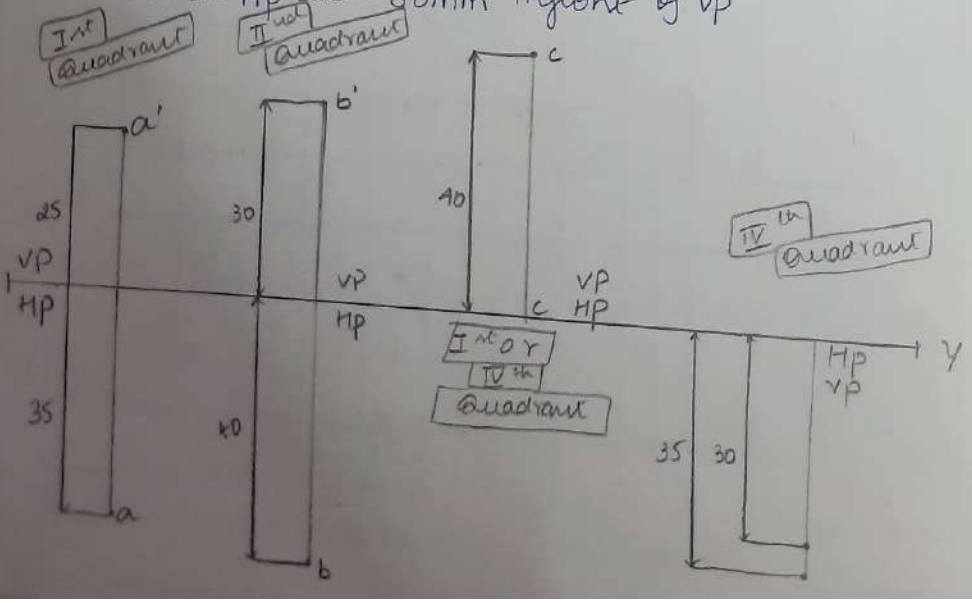
STAFF SIGNATURE

A point P is 30mm infront of VP and 40mm above HP and 50mm from Rpp draw the projection



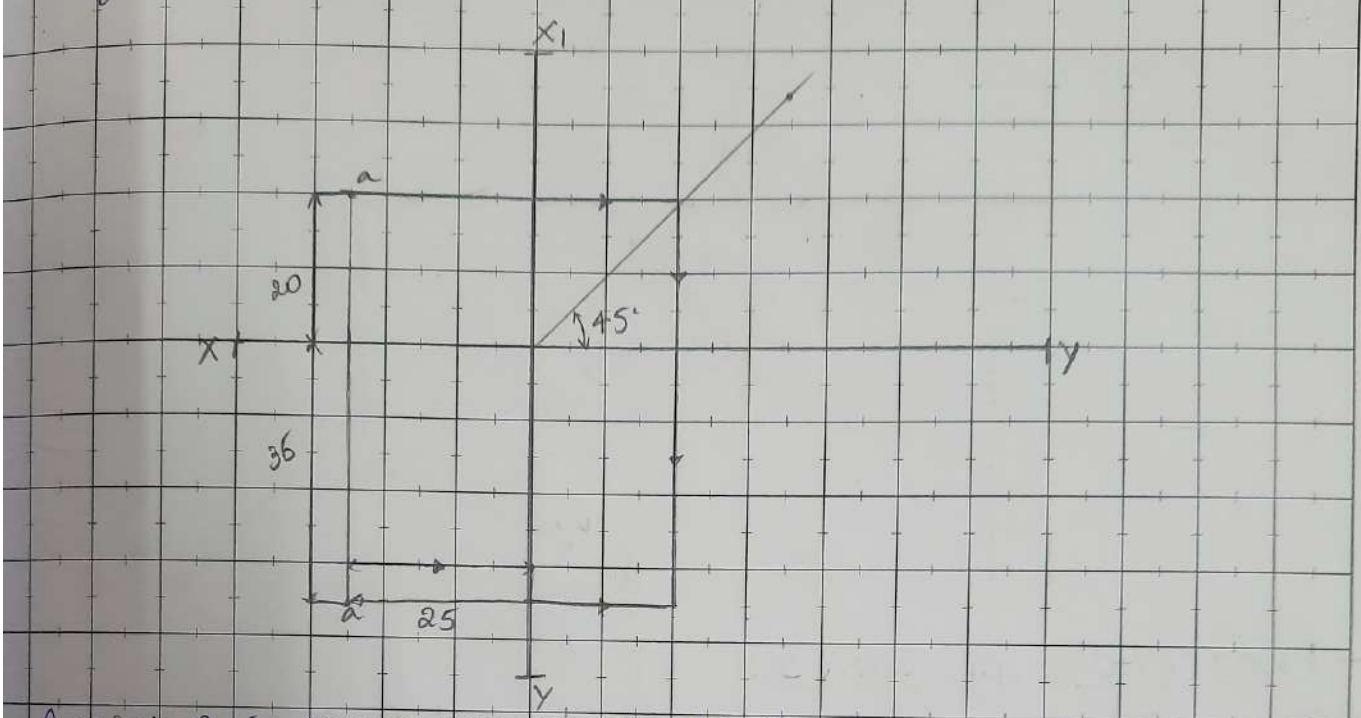
Draw the projections of the following points on the same xy line keeping convenient distance btw/ each projector also state the quadrants in which they lie,

(P) 25mm above HP 35mm infront of VP
(Q) 30mm above HP and 40mm behind VP
(R) 40mm above HP and on VP
(S) 35mm below HP and 30mm infront of VP

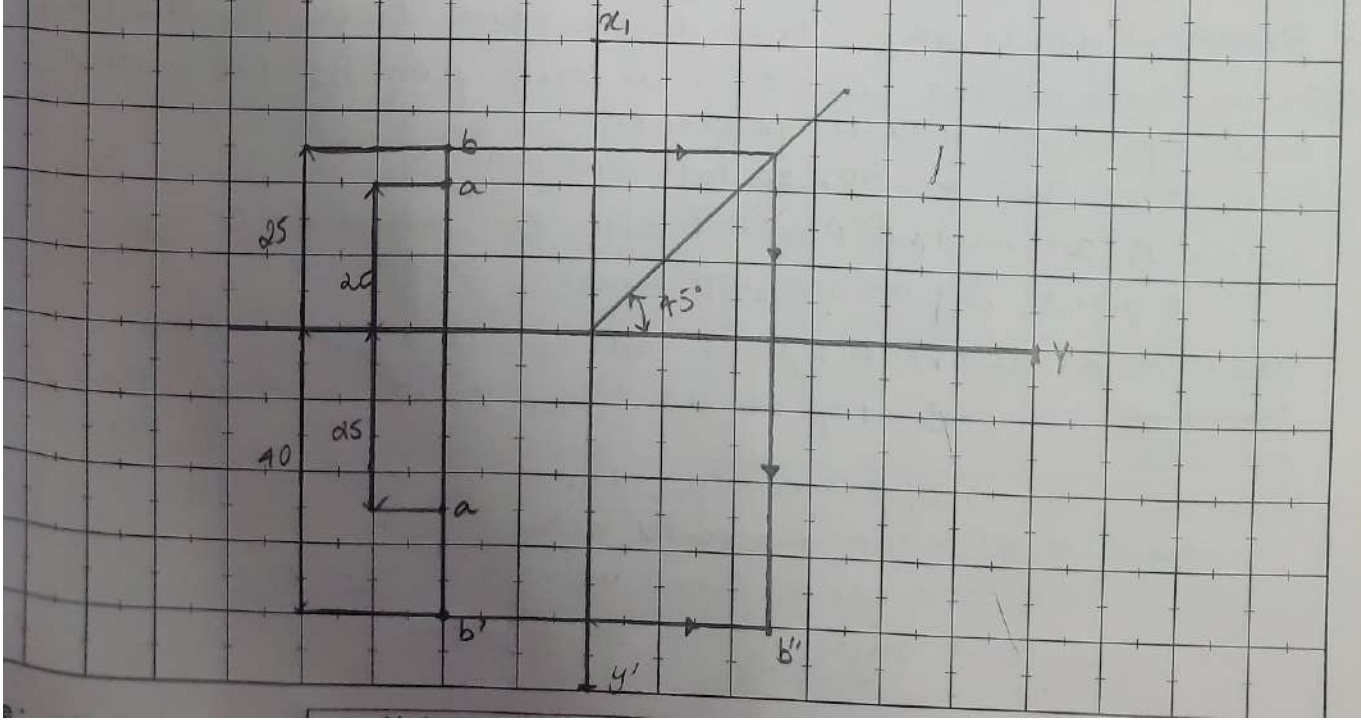


N | SUB. CODE | SEM. | SEM.SHEET No. | of

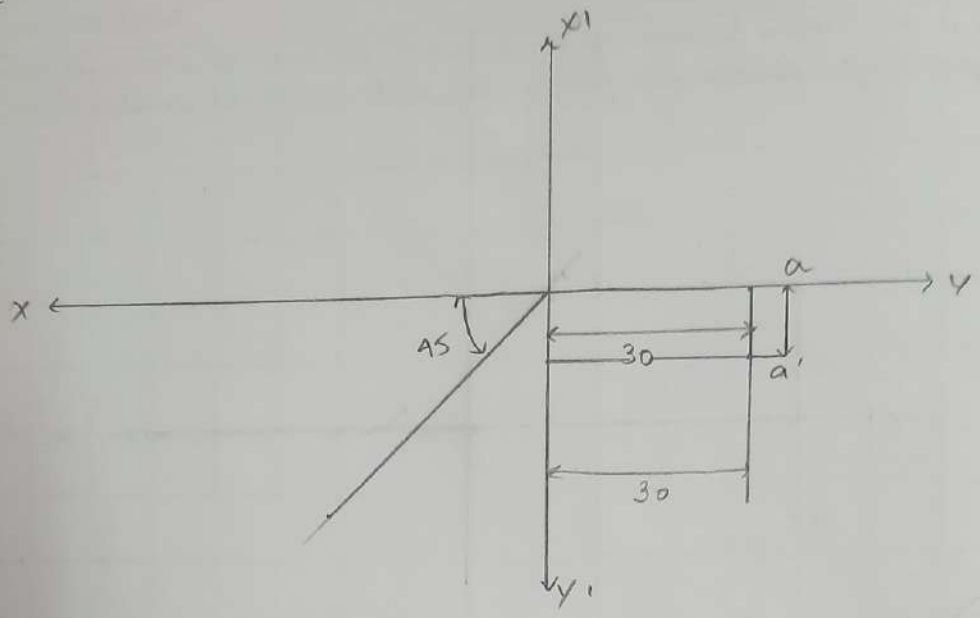
A point is 35mm below HP and 20mm behind VP 25mm behind/infront from RPP. Draw its projection and name its side view



A point A is 20mm above HP and 25mm infront of VP another point B is 25mm behind VP and 40mm below HP draw their projections when the distance b/w their projections parallel to any line is zero mm At the right side view to only point B

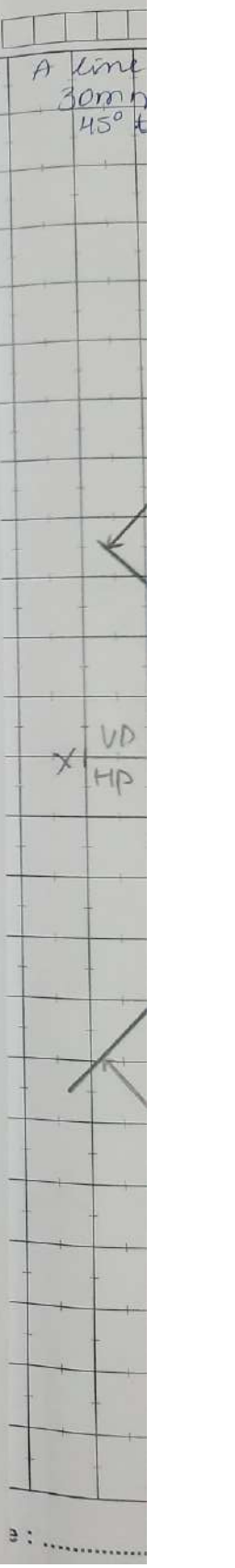


A point is lying on VP 10mm below HP and 30 mm behind / infront from VPP draw its projection and name the side view



— PROJECTION OF LINES :

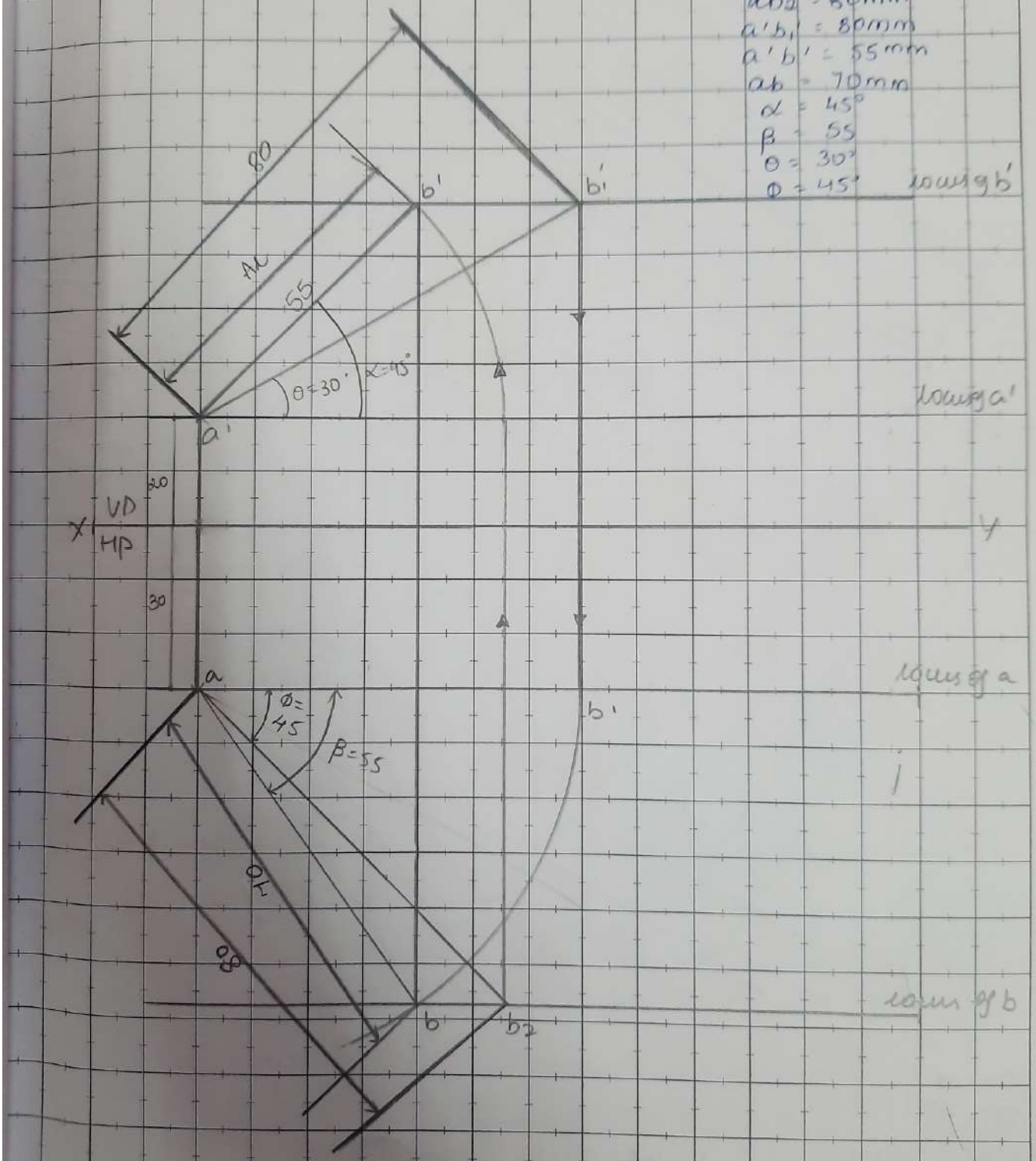
→ Draw XY line fix the position of point A (a, a')
→ Consider Hp inclination and true length draw A'B'1
→ From B1' draw horizontal line (locus of B') and vertical line downwards called projection
→ Join AB1 (horizontal line from A)
→ From A draw AB_2 (true length) and true inclination
→ Draw horizontal line that is locus from B_2 and vertical line upwards that is projection
→ Join $a'b_2'$ that is horizontal line from a'
→ With A as centre AB1 as radius cut locus of B at point B join AB (top view)
→ Take A' as centre $A'B_2'$ as radius cut locus of B/at ~~Point B join AB (top view)~~ b' at B' Join A'B' (front view)
→ Measure AB → aparent top view
Measure A'B' → aparent front view
α → angle of front view
β → angle of Top view



SN | SUB. CODE | SEM. | SEM.SHEET No. | of

A line AB 80mm long as its end A 20mm above HP and 30mm infront of VP it is inclined at 30° to HP and 45° to VP. Draw the projections of line and

$ab_2 = 80mm$
$a'b_1 = 80mm$
$a'b' = 55mm$
$ab = 70mm$
$\alpha = 45°$
$\beta = 55$
$\theta = 30°$
$\phi = 45°$



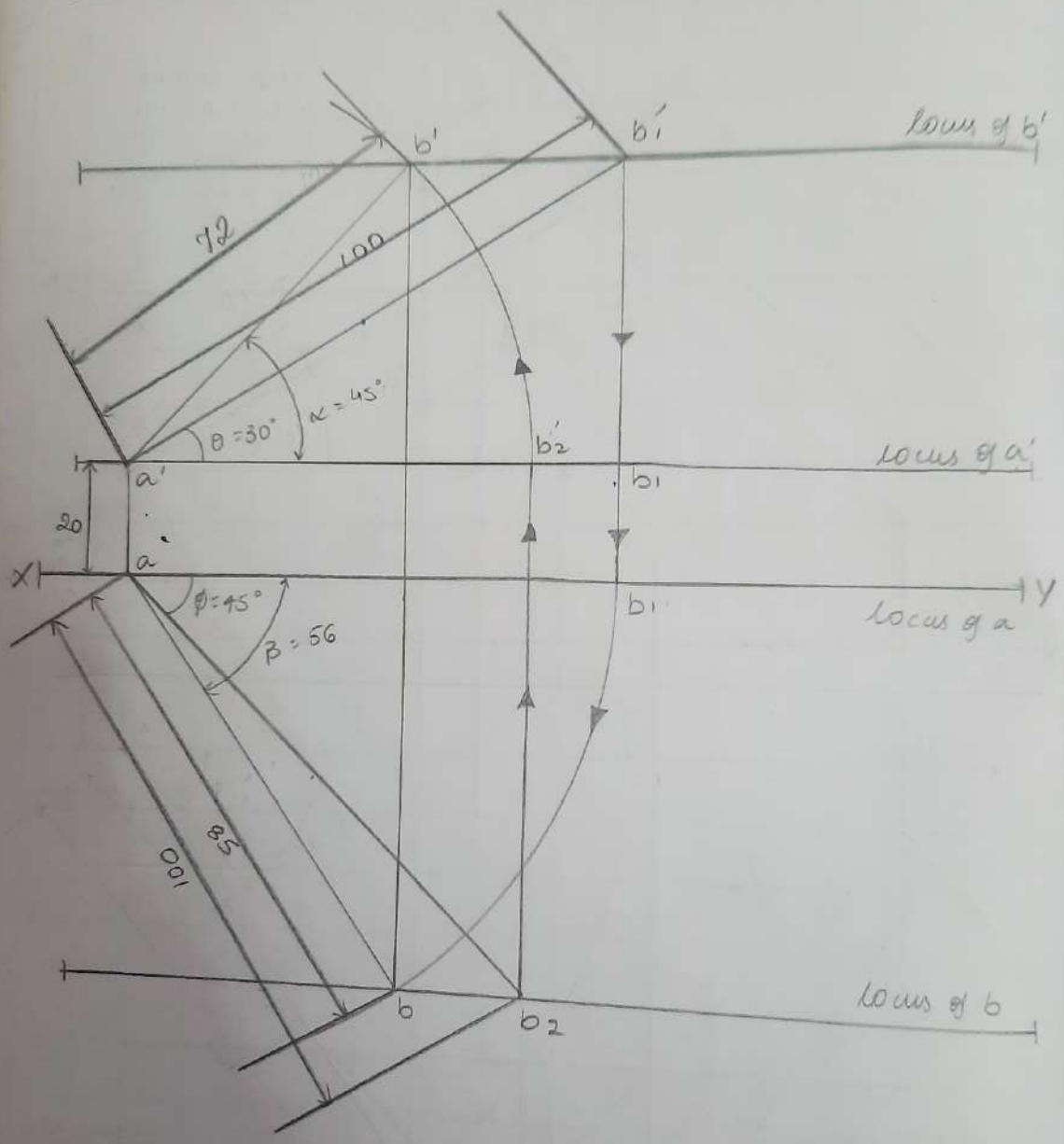
Date : .....

Unit 0f = 10mm

STAFF SIGNATURE :

Draw the projections of Line AB 100mm long inclined at 45° to Vp and 30° to Hp. One end of the line is 20mm above Hp and in Vp. Determine length and inclination

①



$\theta = 30$

$\phi = 45$

$a'b' = 72mm$

$ab = 85mm$

$ab_2 = 100mm$

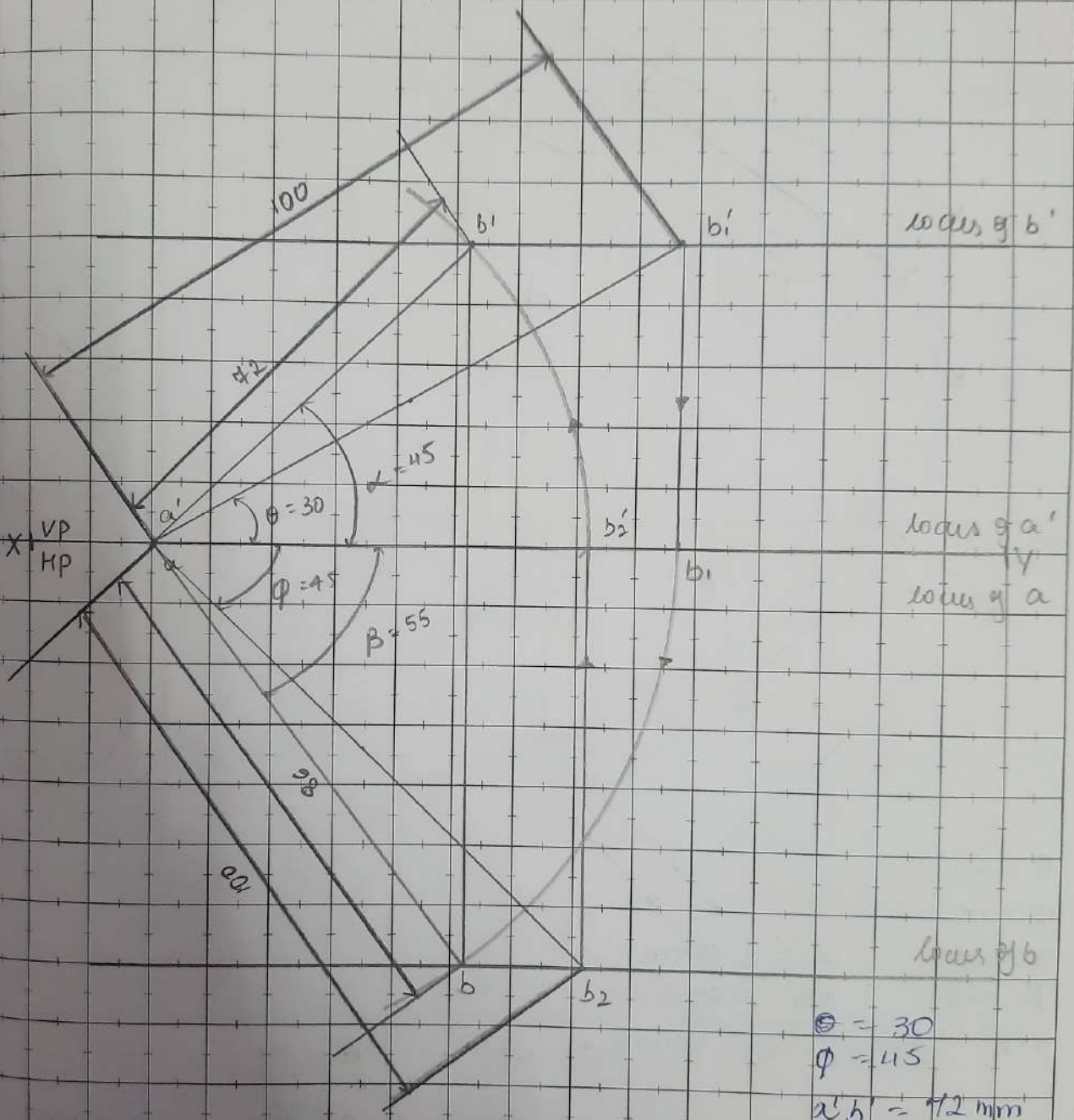
$a'b_1' = 100\ mm$

$\alpha = 45°$

$\beta = 56°$

USN | SUB. CODE | SEM. | SEM.SHEET No. | of

A line AB 100mm long is inclined to HP at 45° and inclined to VP at 30°. Draw the front and top views of lines and determine their lengths. Also determine the perpendicular distance of end B from both HP and VP



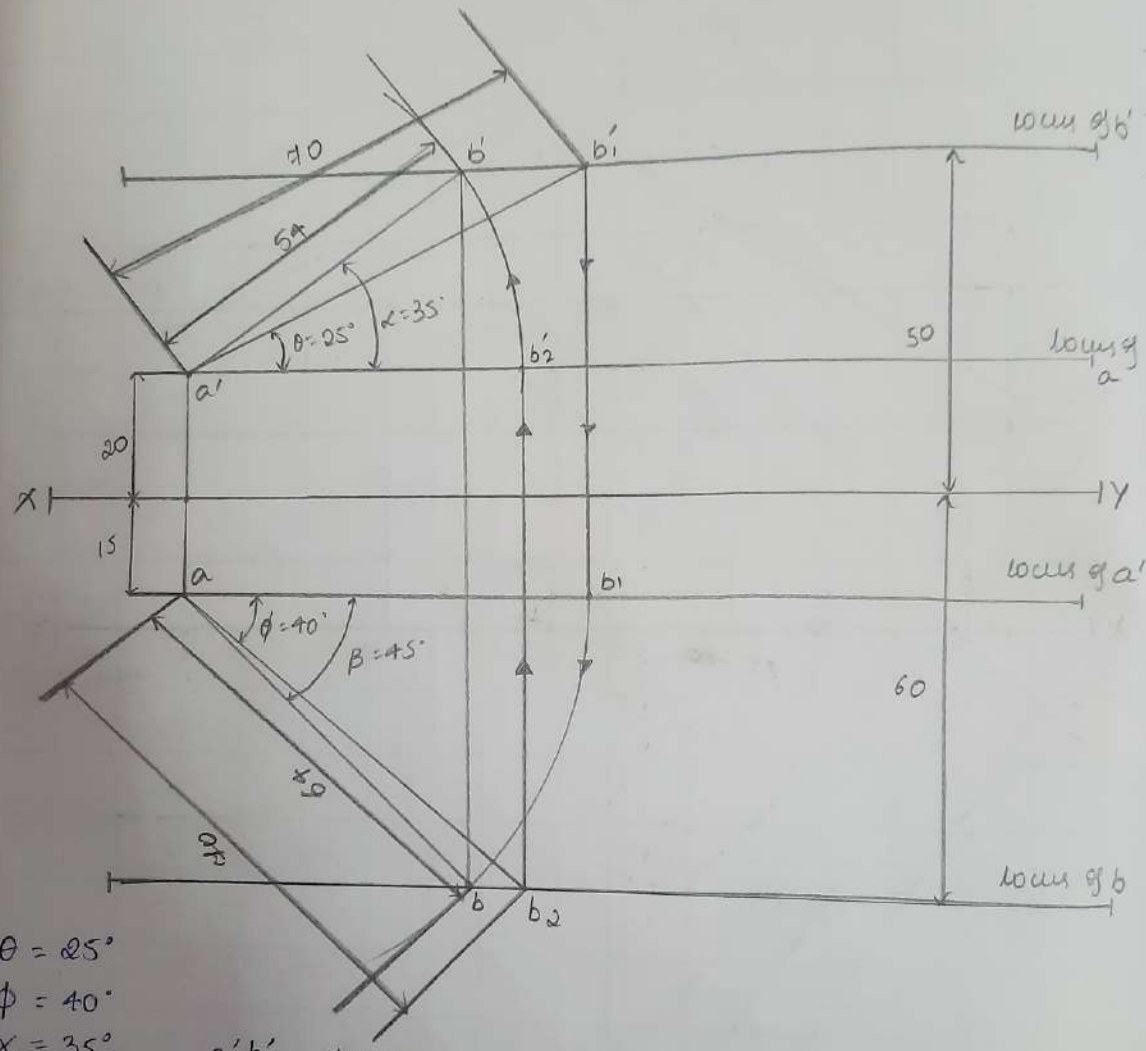
θ = 30
φ = 45
a'b' = 42 mm
a1b1' = 100mm
ab = 86mm
ab2 = 100mm

Date : .....

Unit 0f = 10mm

STAFF SIGNATURE : .....

line AB measuring 70mm has its end A 15mm infront of vp and 20mm above Hp and the other end B 60mm infront of vp and 50mm above Hp. Draw the projections of line and find the inclinations of line with the both reference plane of projection

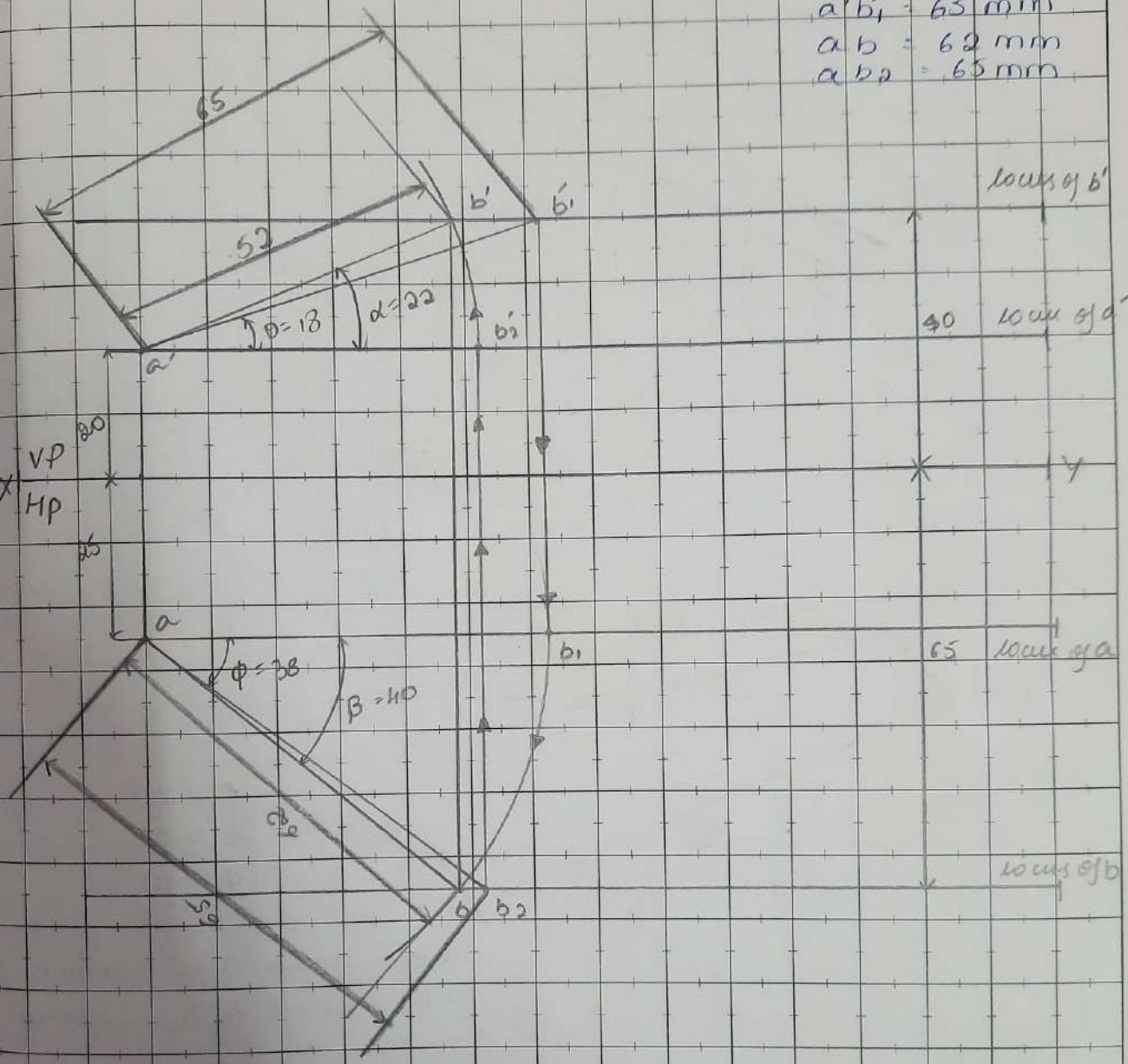


$\theta = 25°$
$\phi = 40°$
$\alpha = 35°$
$\beta = 45°$
$a'b' = 54mm$
$a'b_1' = 70mm$
$ab = 64mm$
$ab_2 = 70mm$

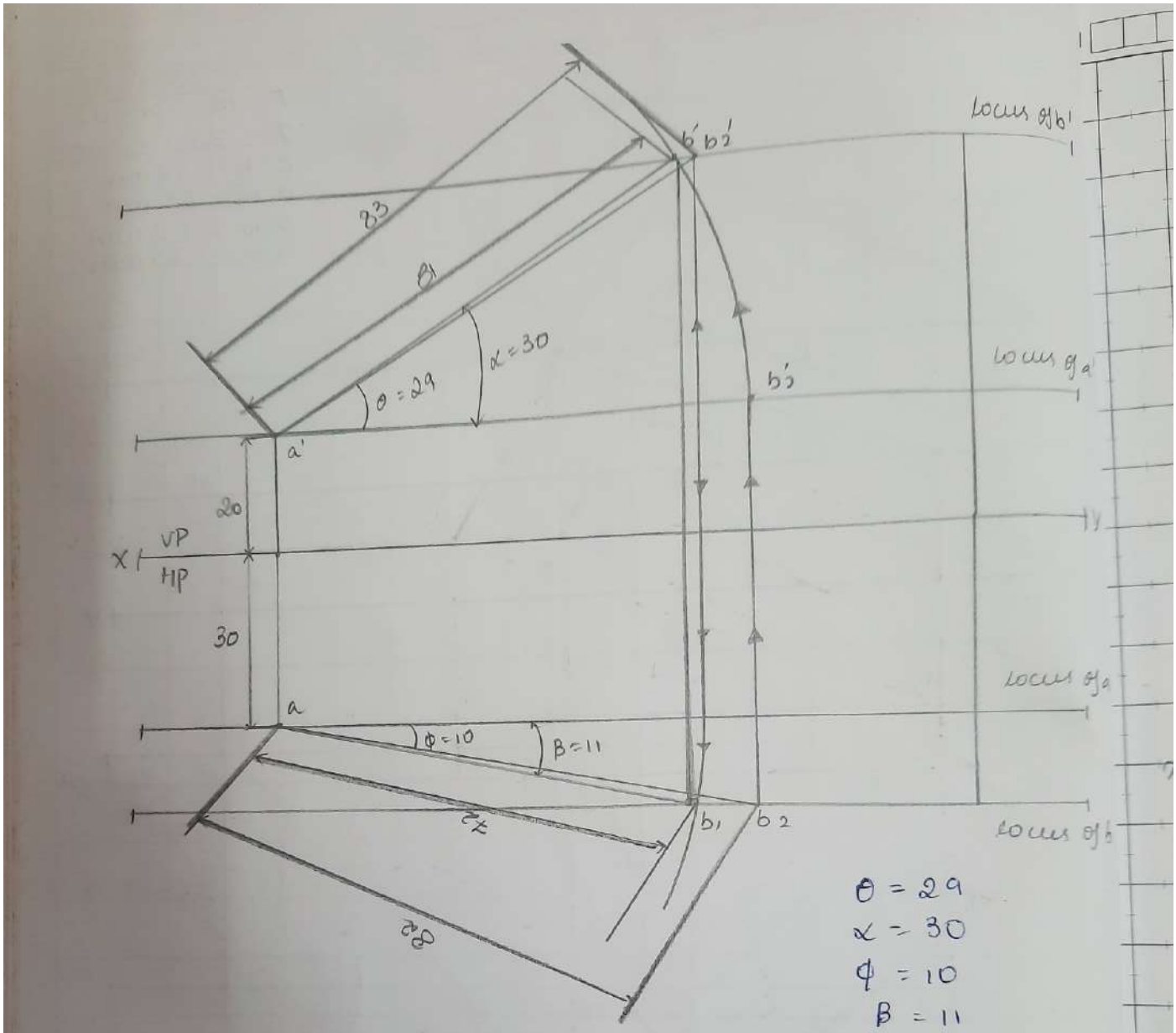
A line AB 65mm long has its end A = 20mm above HP and 25mm infront of VP. The end B is 40mm above HP and 65mm infront of VP. Draw the projection of AB and show its inclinations with HP

SUB. CODE SEM. SEM.SHEET No. of

$\theta = 18$ $\alpha = 22$
$\phi = 38$ $\beta = 110$
$a'b' = 52$ mm
$a'b_1' = 65$ mm
$ab = 62$ mm
$ab_2 = 65$ mm



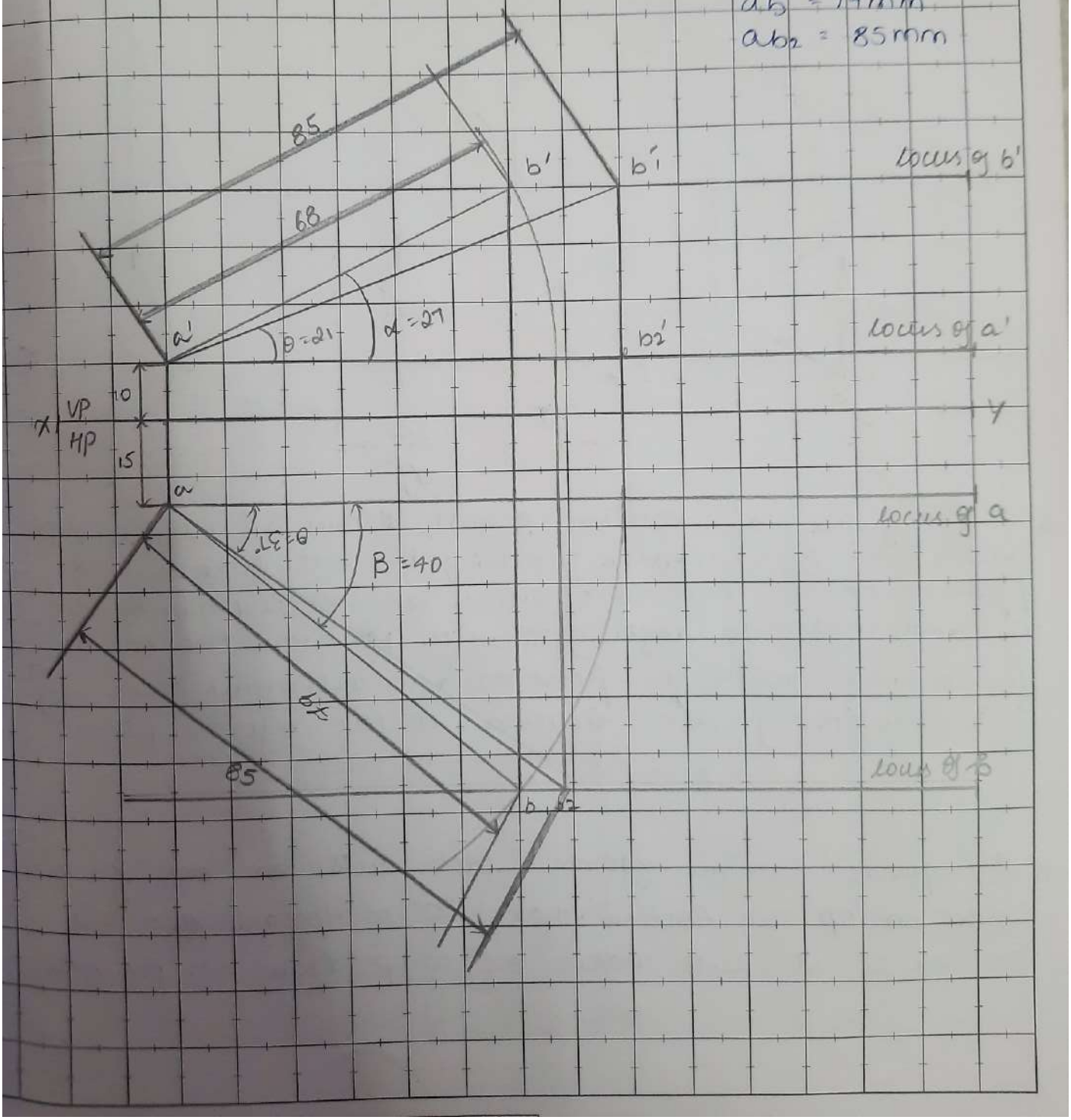
A line AB has its end A 20mm above Hp and 30mm infront of VP. The other end B is 60mm above Hp and 45mm infront of VP. The distance between end projection is 70mm Draw its apparent projection. Determine the true length and inclination



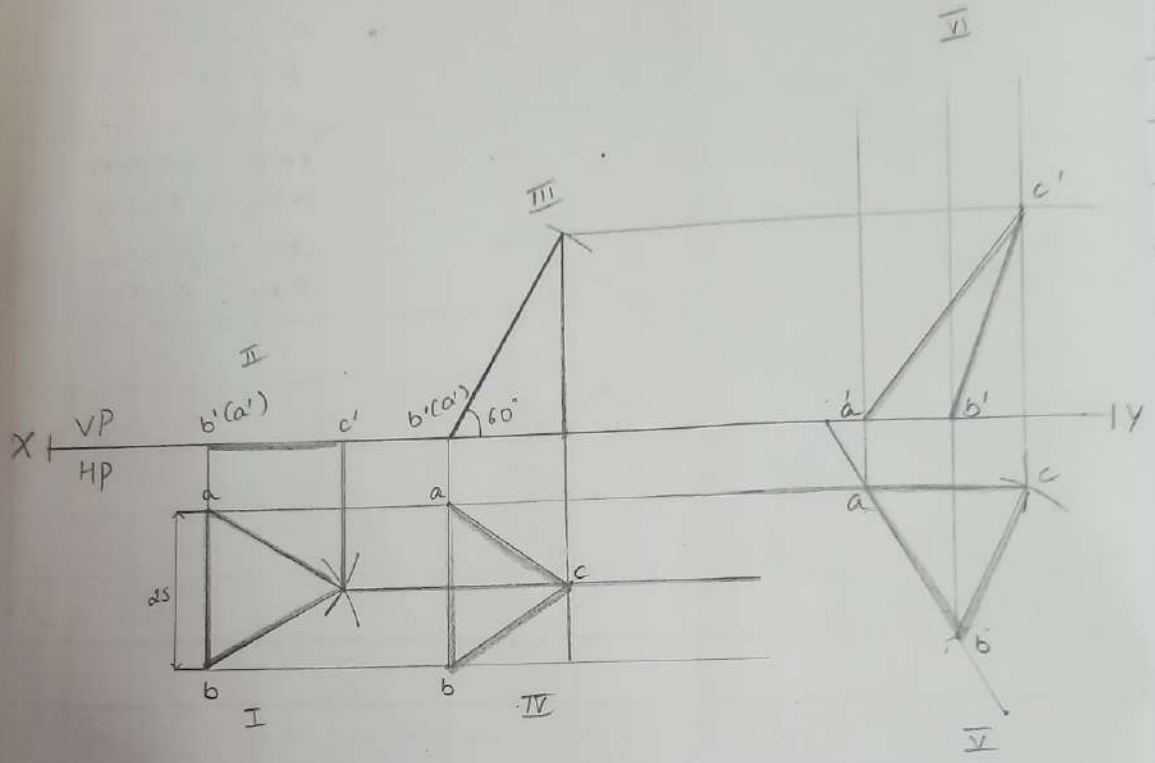
A line PQ 85mm long has its end P 10mm above HP and 15mm infront of VP. the top view and front view of the line PQ are 75mm and 80mm respectfully Draw its projections and also determine the true and apparent inclination of line

SUB. CODE | SEM. | SEM.SHEET No. 01

$\theta = 21$
$\alpha = 27$
$\phi = 37$
$\beta = 40$
$a'b' = 68\,mm$
$a'b_1' = 85\,mm$
$ab_1 = 79\,mm$
$ab_2 = 85\,mm$

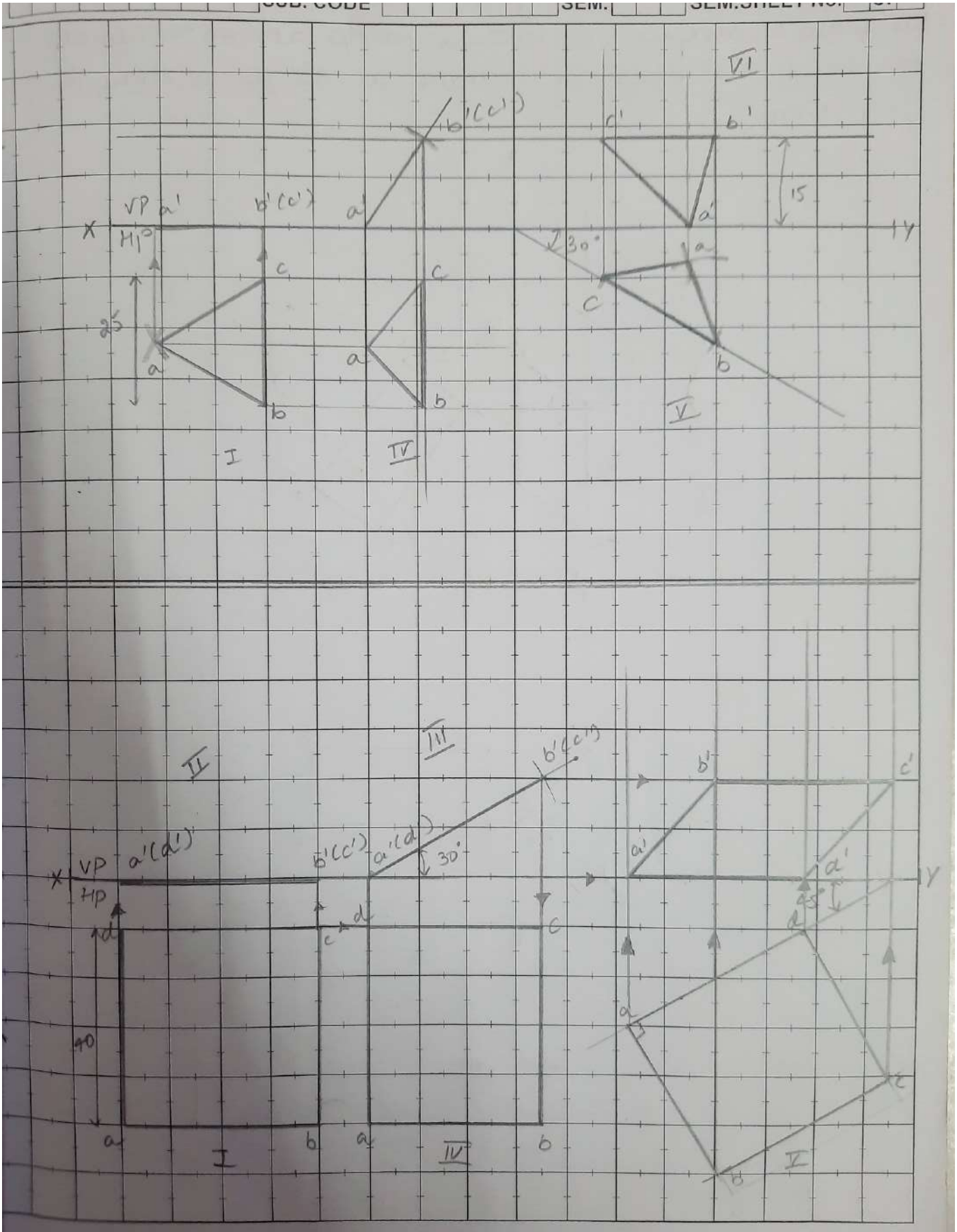


An Equilateral triangular lamina of 25mm side lies with one of its edges on HP such that the surface of the lamina is inclined to HP at 60°. The edge on which it rests to VP at 60°. Draw the projections.



A triangular plane lamina of side 25mm is resting on HP with one of its corners touching it such that the side opposite to the corners on which its rest is 15mm above HP and makes an angle of 30° with VP draw the top and front view with its position also determine the inclination of the lamina to the reference plane

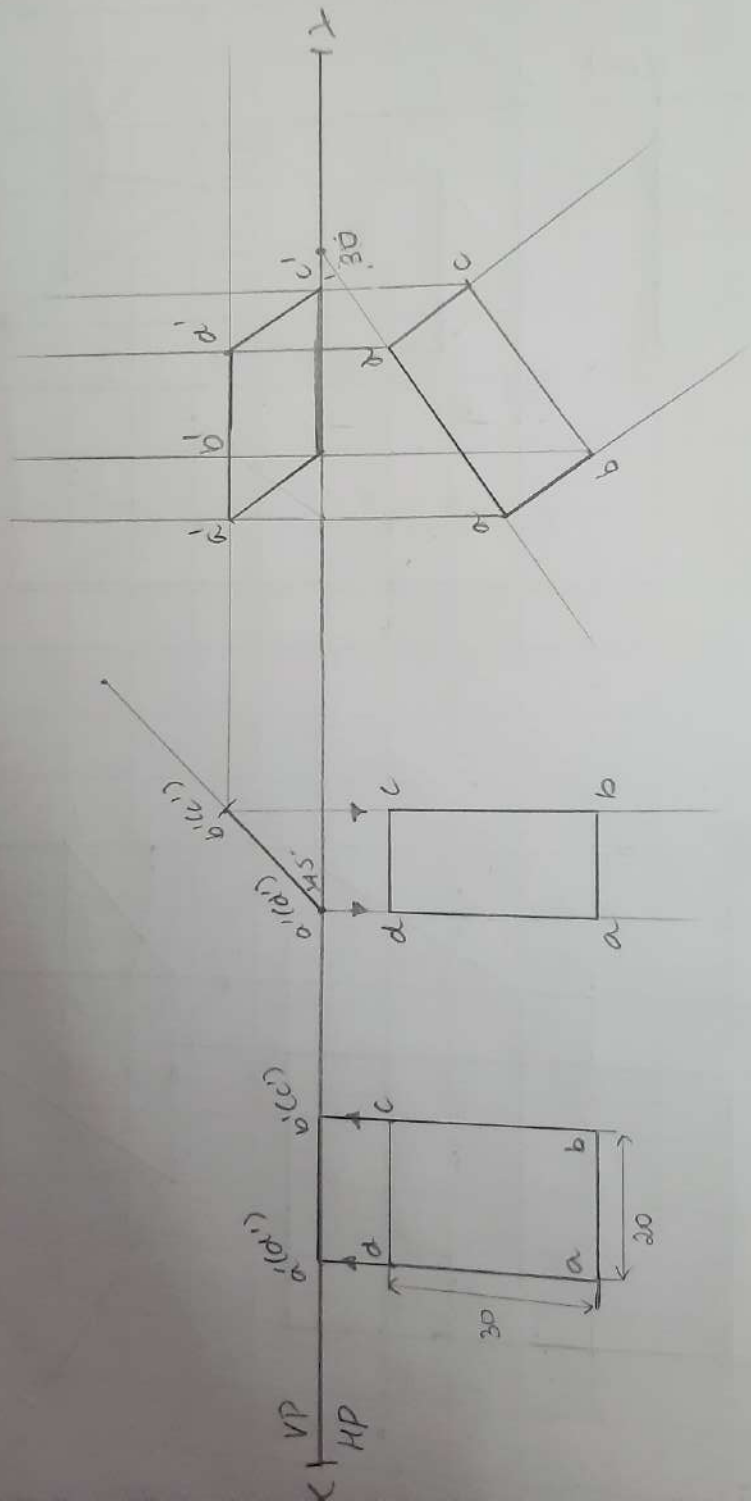
A square lamina of 40mm sides rests on one of its sides on HP. The lamina makes 30° to HP and the side on which it rests makes 45° to VP draw its projections



Unit 0f = 10mm

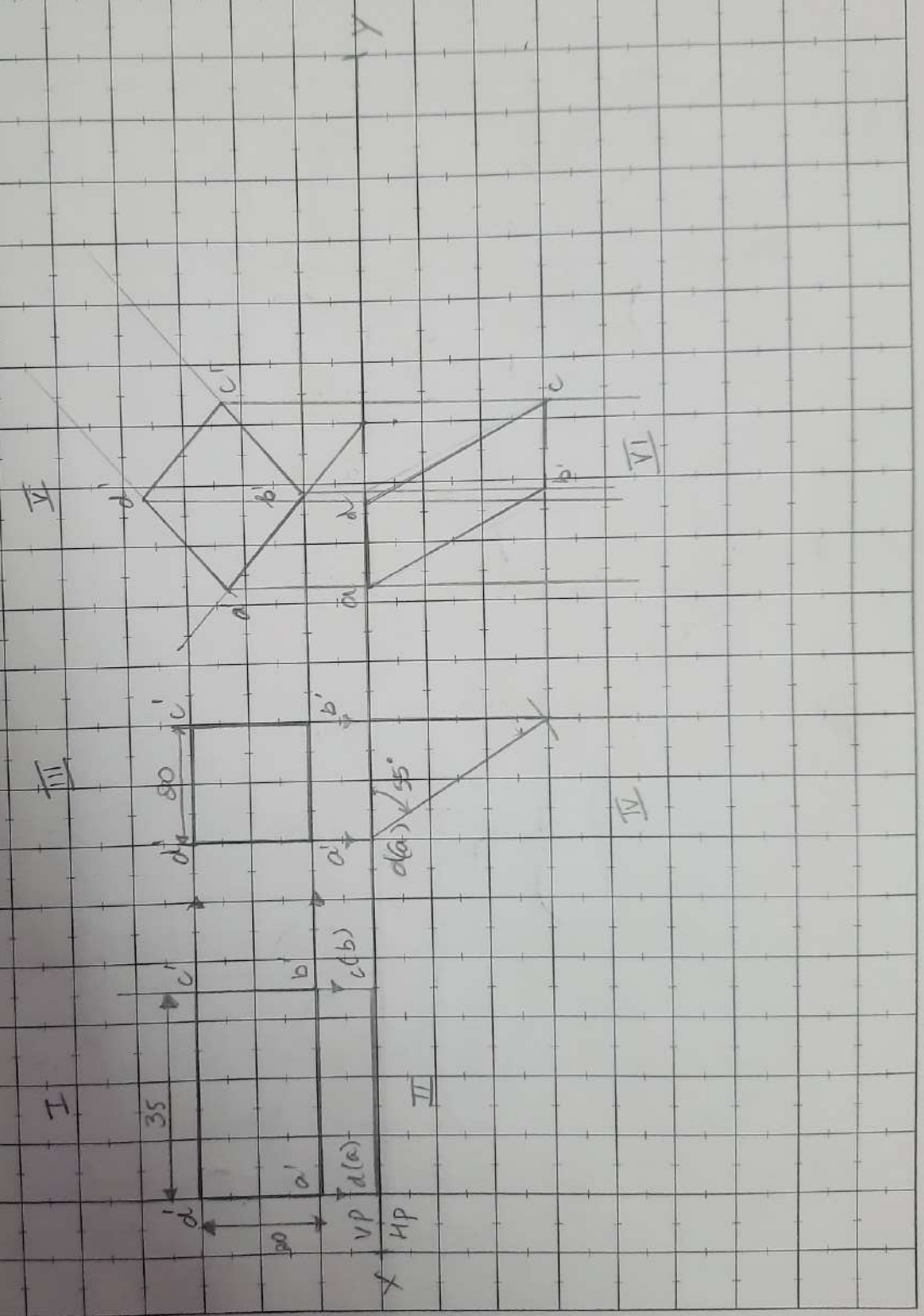
STAFF SIGNATURE : .....

A rectangular lamina of sides 20mm by 30mm rests on HP on one of its longer edges. The lamina is tilted about the edge on which its rests till the plane surface is inclined to HP at 45°. The edge on which its rests is inclined at 30° to VP. Draw its projections



USN | SUB. CODE | SEM. | SEM.SHEET No. | of

A rectangular plane of negligible thickness of size 35 x 20 mm has one of its shorter edges in VP with that edge inclined at 40° to HP. Draw the top view if its front view is a square of side 20mm.

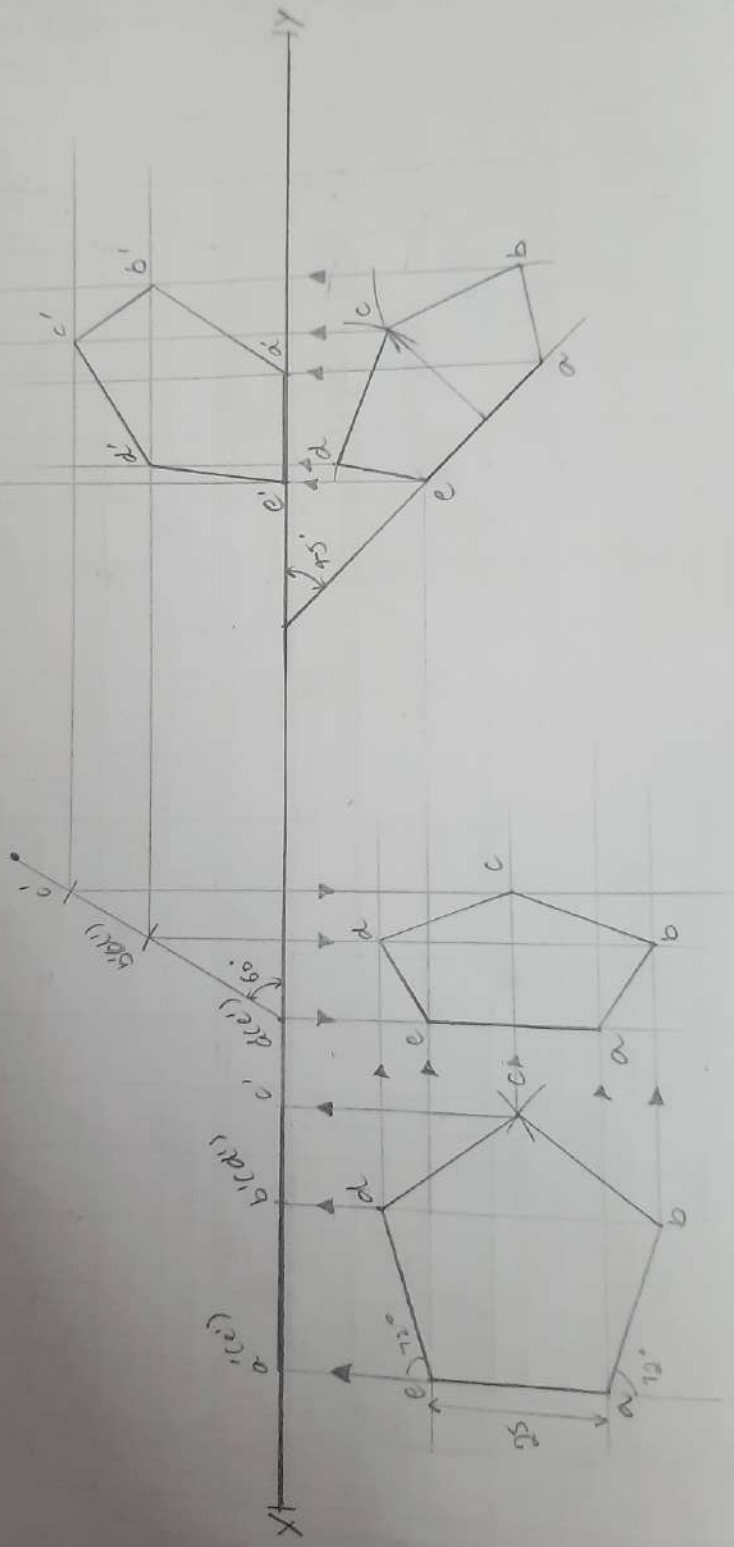


Date : .....

Unit 0f = 10mm

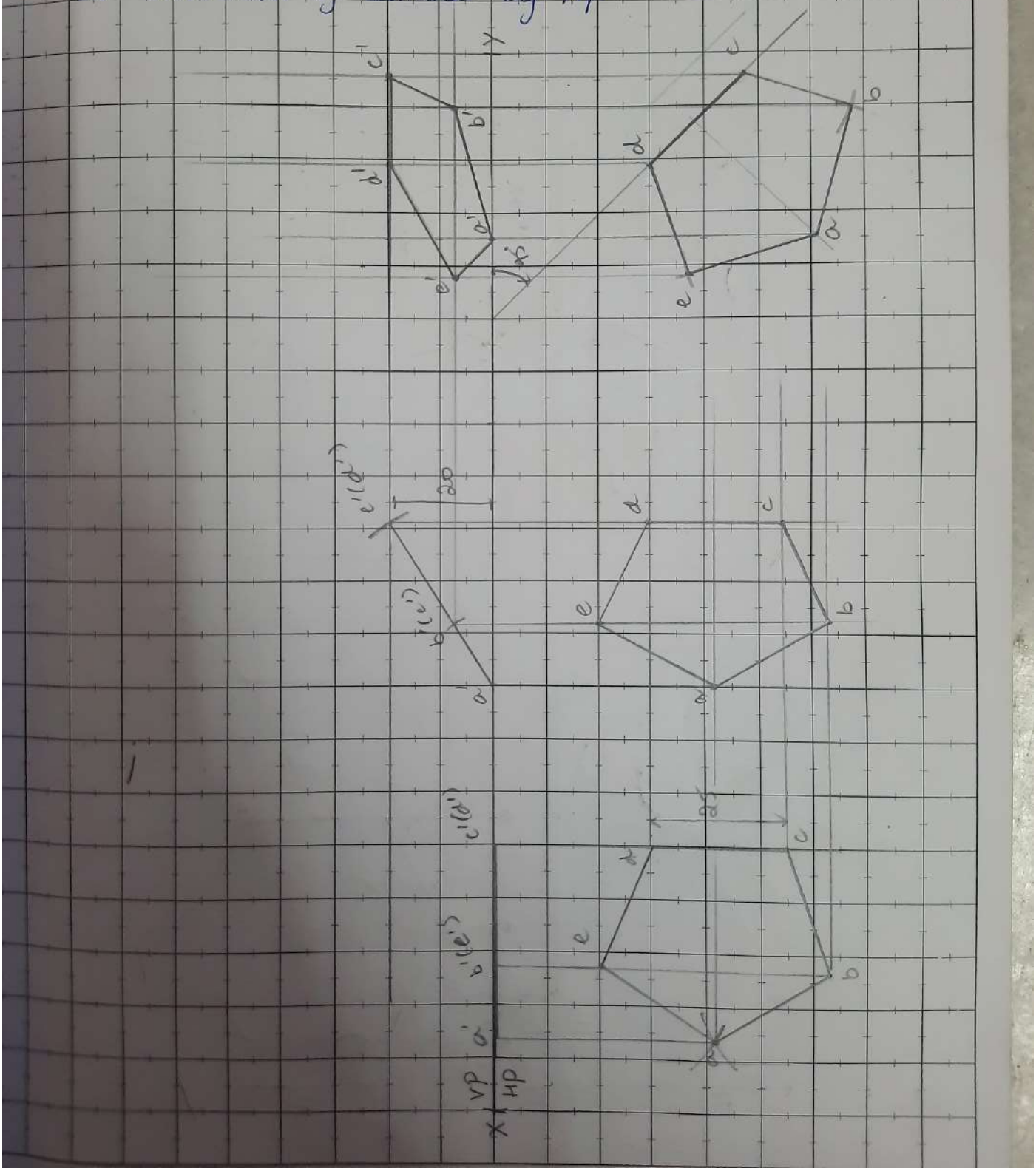
STAFF SIGNATURE : .....

A pentagonal lamina of edges 25mm is resting on Hp with one of its sides such that the surface makes an angle of 60° with Hp and the edge on which its rest is inclined on 45° to Vp draw its projection

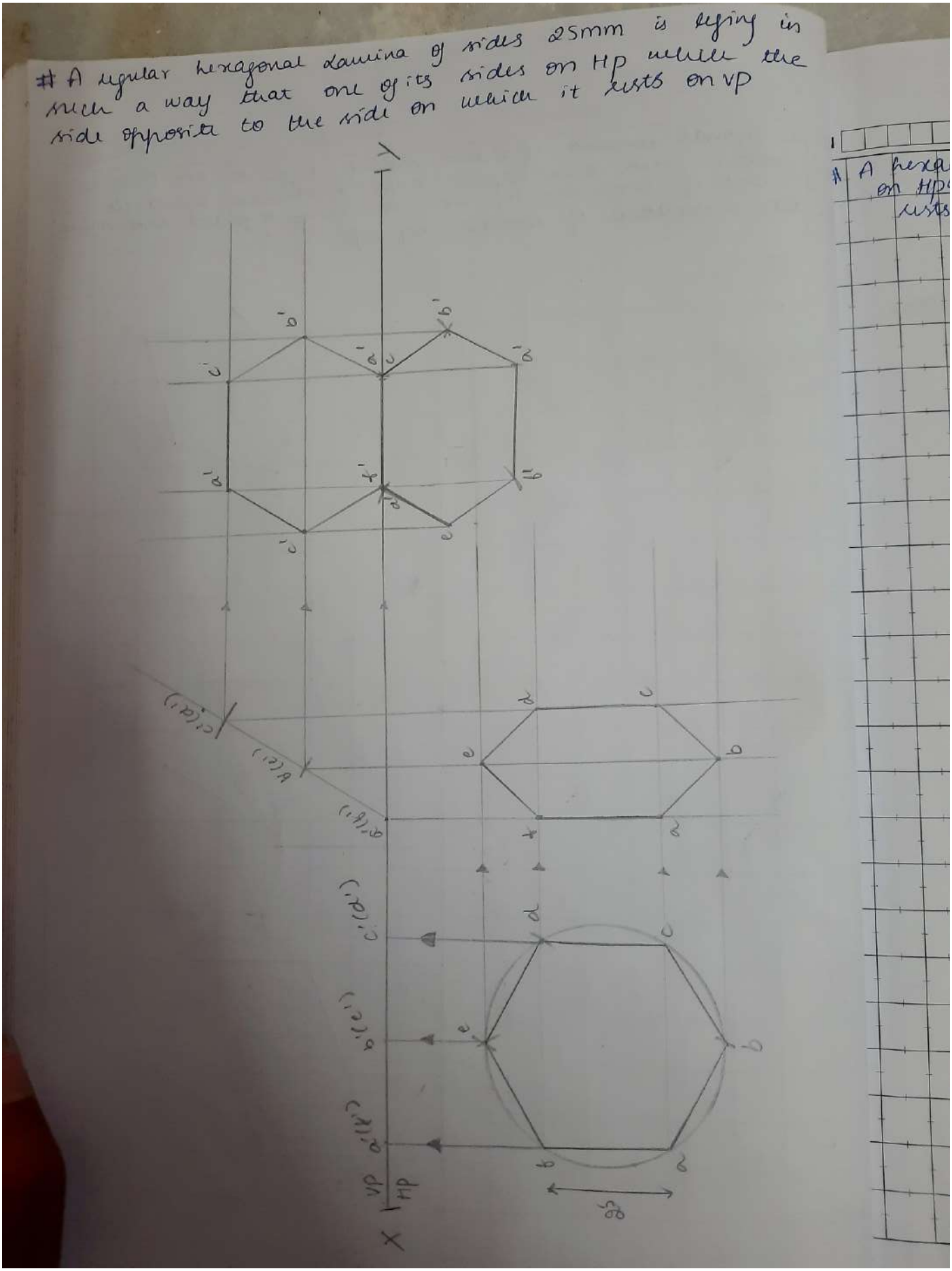


SUB. CODE | SEM. | SEM.SHEET No. | of

1. A pentagonal lamina of 25mm resting on HP on one of its corners such that edge opp corner is 20mm above HP makes an angle 45° with VP draw the top and front views of plane. Determine the inclination of lamina by HP

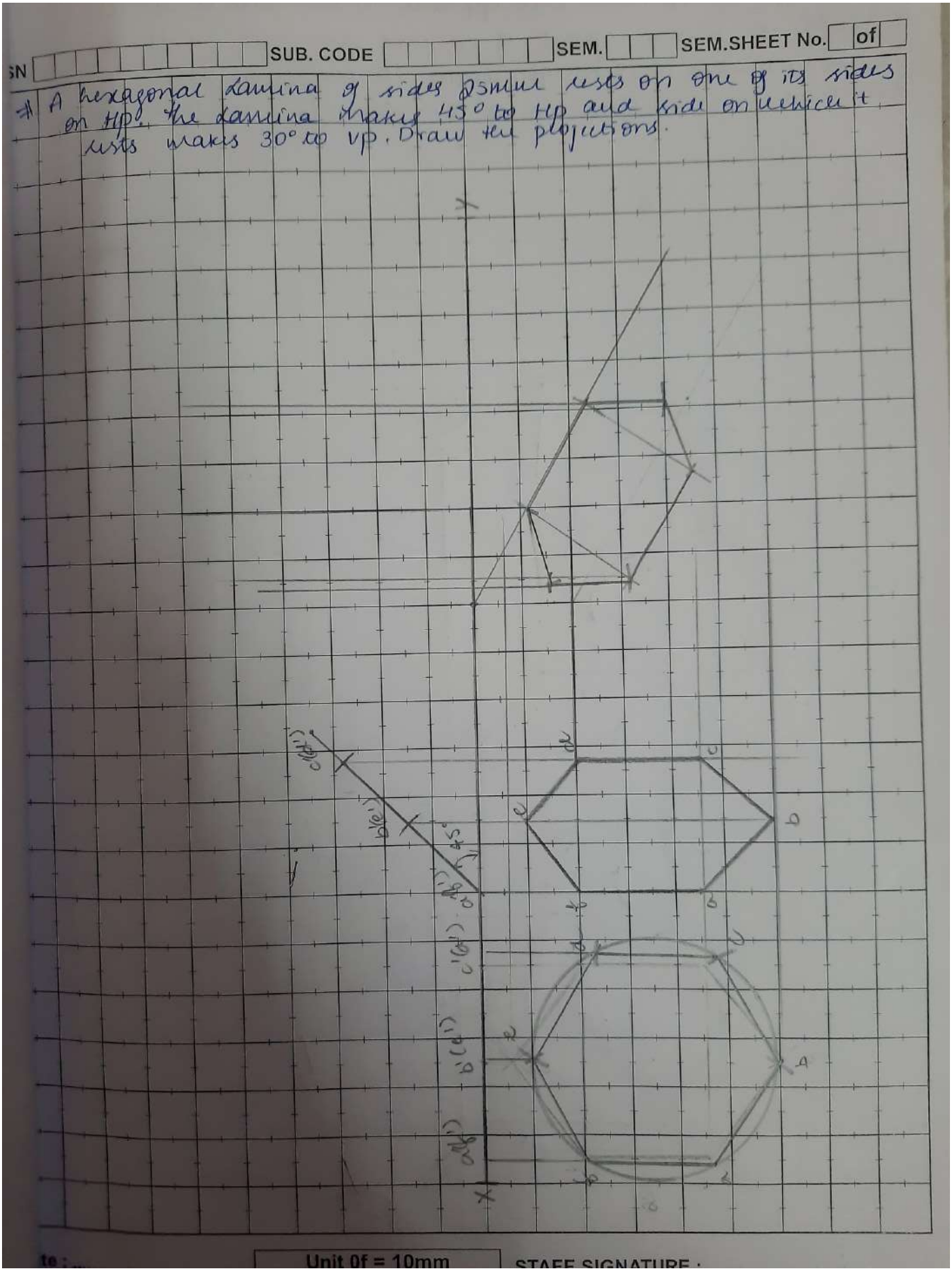


A regular hexagonal lamina of sides 25mm is lying in such a way that one of its sides on HP while the side opposite to the side on which it rests on VP



USN | SUB. CODE | SEM. | SEM.SHEET No. | of

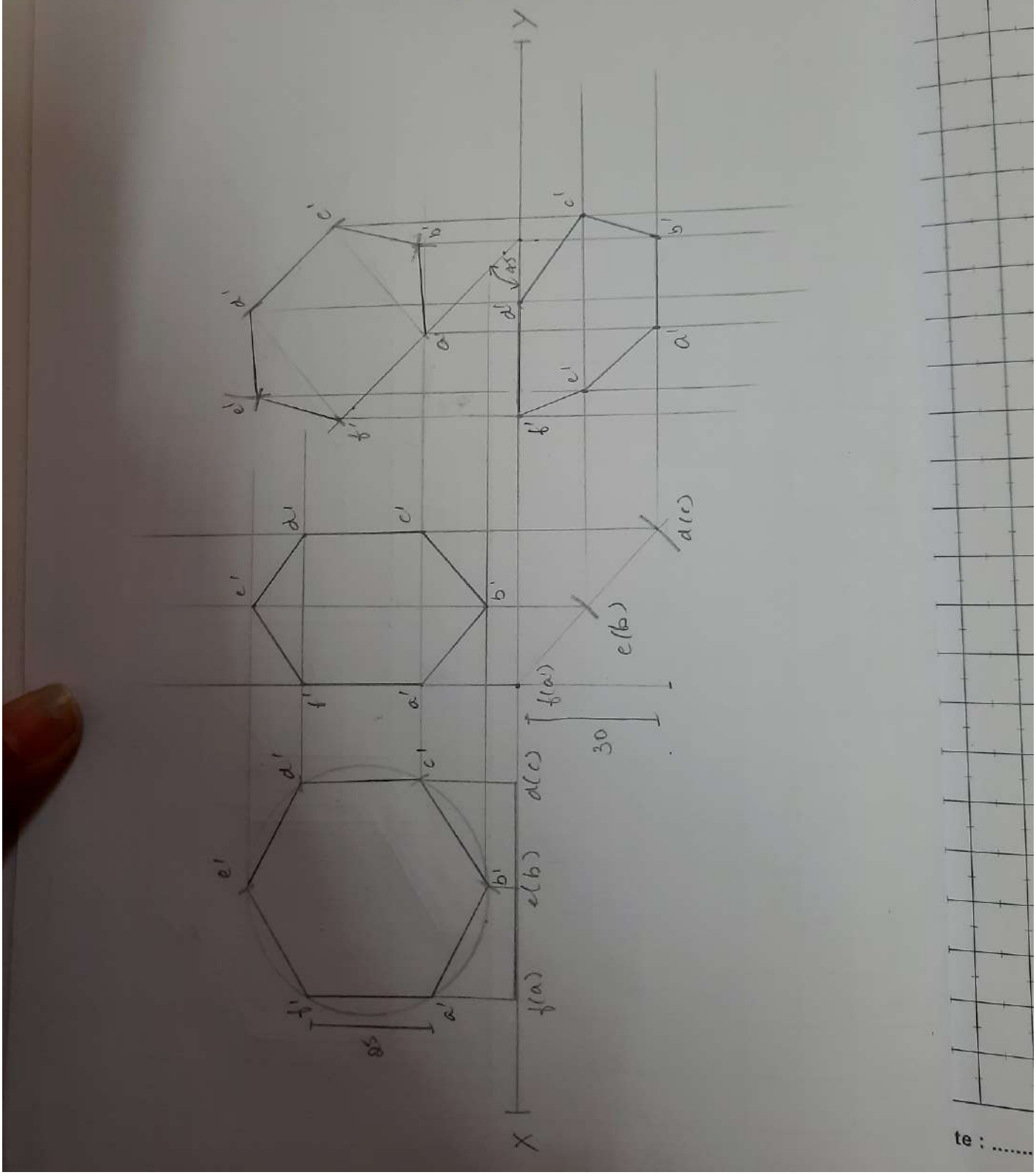
A hexagonal lamina of sides 25mm rests on one of its sides on HP. The lamina makes 45° to HP and side on which it rests makes 30° to VP. Draw the projections.



Unit Of = 10mm

STAFF SIGNATURE :

A hexagonal lamina of sides 25mm rests on one of its sides on VP the side opposite to the side on which it rests is 30mm infront of VP and the side on which it rests makes 45° to HP draw its projection also determine the inclination of the lamina with reference pt.



N

te : .....