① Draw the projections of the following point on the XY line keeping a convenient distance between each projection and name the Quadrants in which they lie.

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

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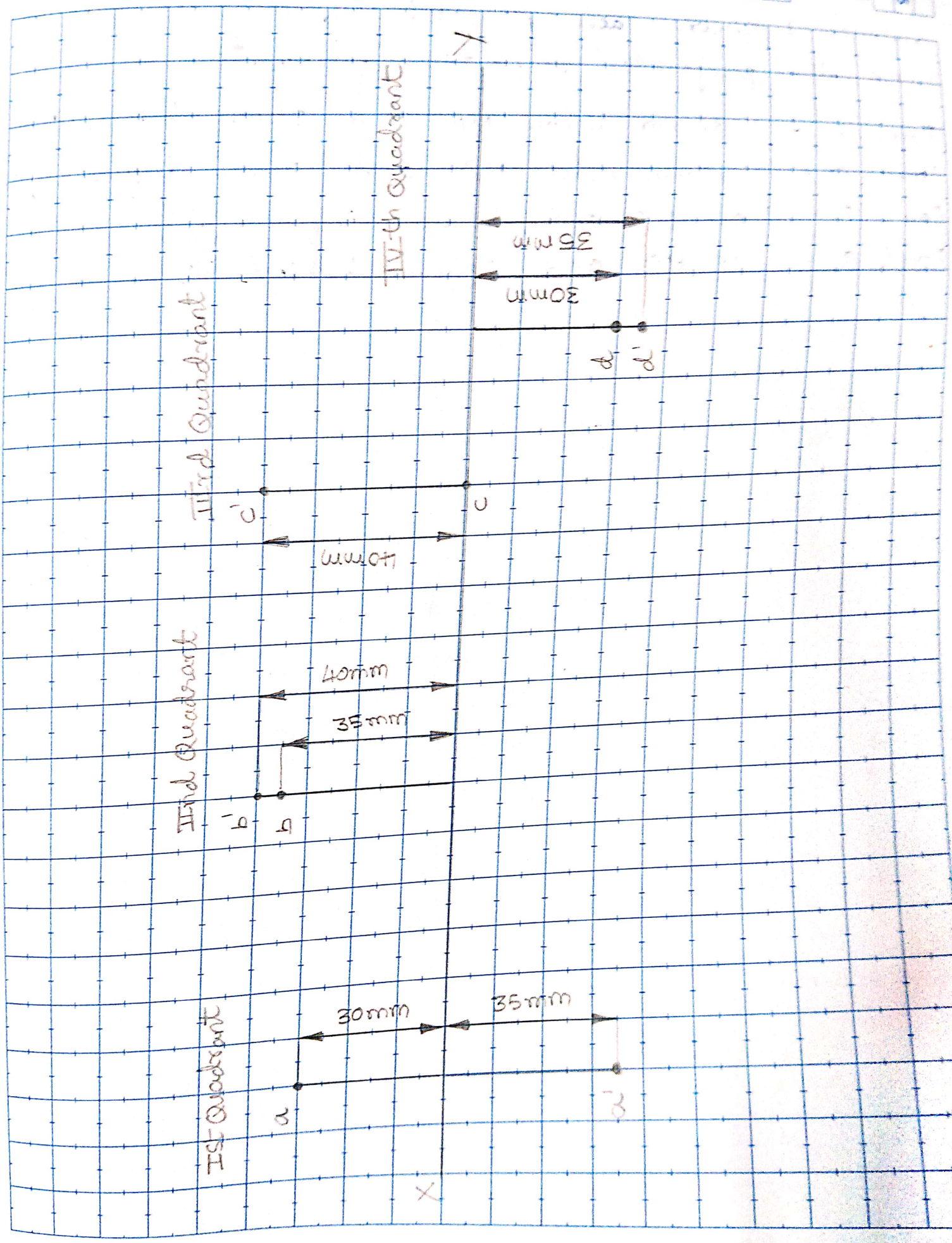

Date : 25/03/25

Scale : 1 Unit = 10 mm

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② Draw the projections of the following points on the same XY line keeping a convenient distance between each projectiles and name the projectiles' respective quadrants

Point M ⟶ 30mm below HP and 25mm behind VP

Point N ⟶ 35mm below HP and 30mm infront of VP

Point P ⟶ on HP and 30mm infront of VP

Point Q ⟶ on HP and 35mm behind VP

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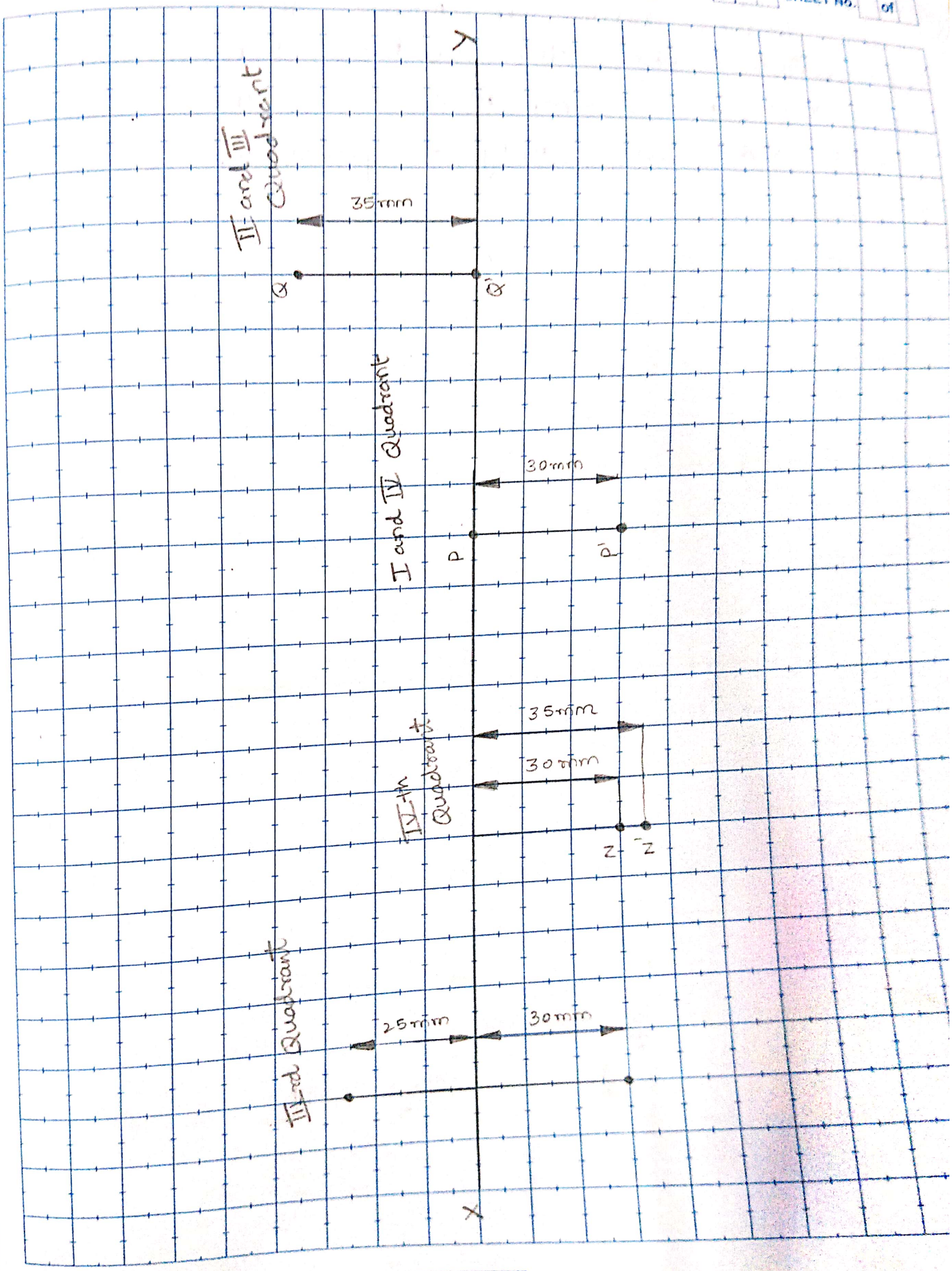

Date : 26/03/25

Scale : 1 Unit = 10 mm

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(3.) A point 'a' is 20 mm above HP and 25mm infront of VP. Point 'b' is 25mm behind VP and 40 mm below HP. Draw their projections when the distance between the projectors is 0' mm. Also, draw the right side view only to point B.

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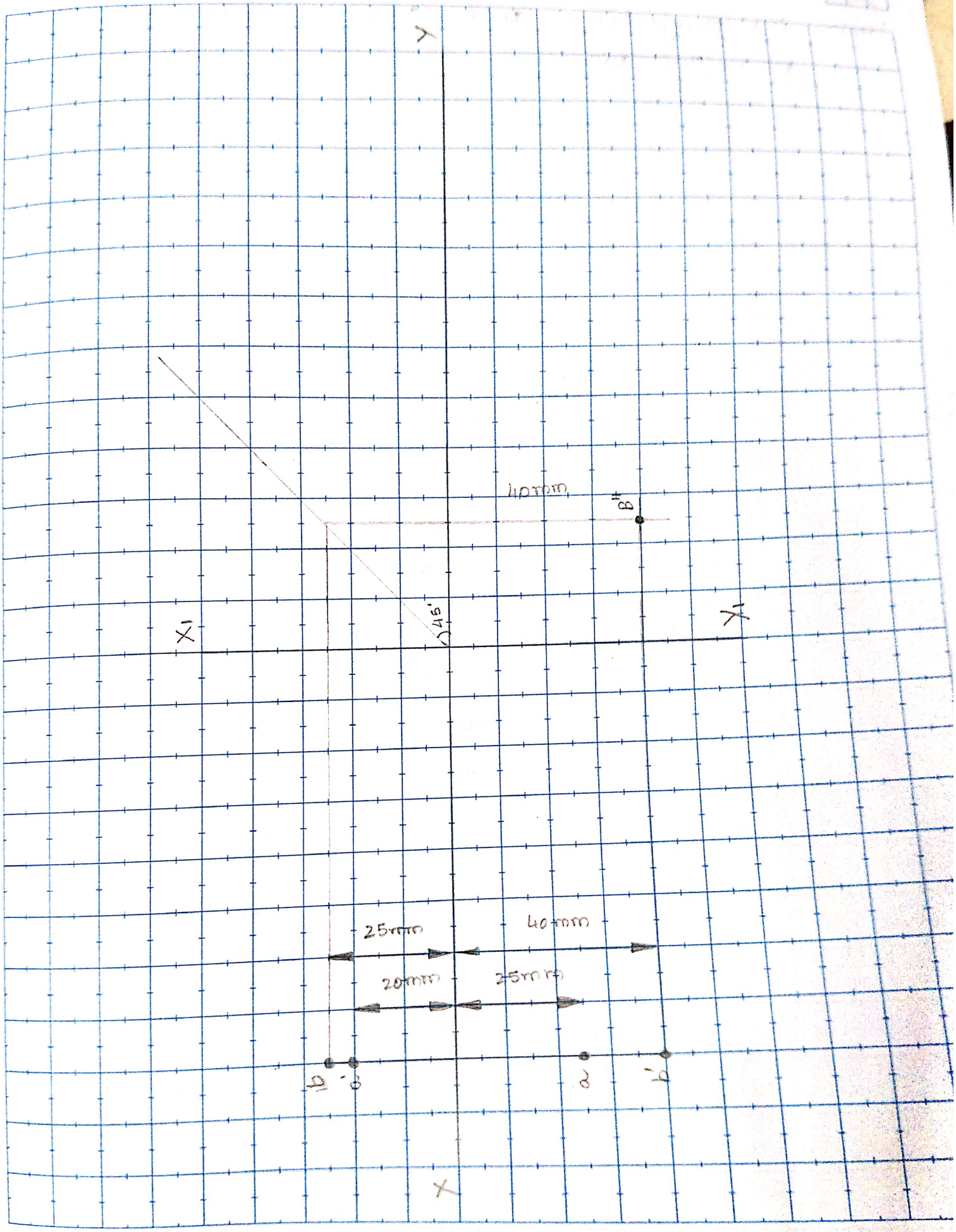

Date : 26/03/25

Scale : 1 Unit = 10 mm

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(1) A point P is 30 mm infront of VP and 40 mm above HP and 50 mm from right profile plane Draw the projections and also mention the three principal views.

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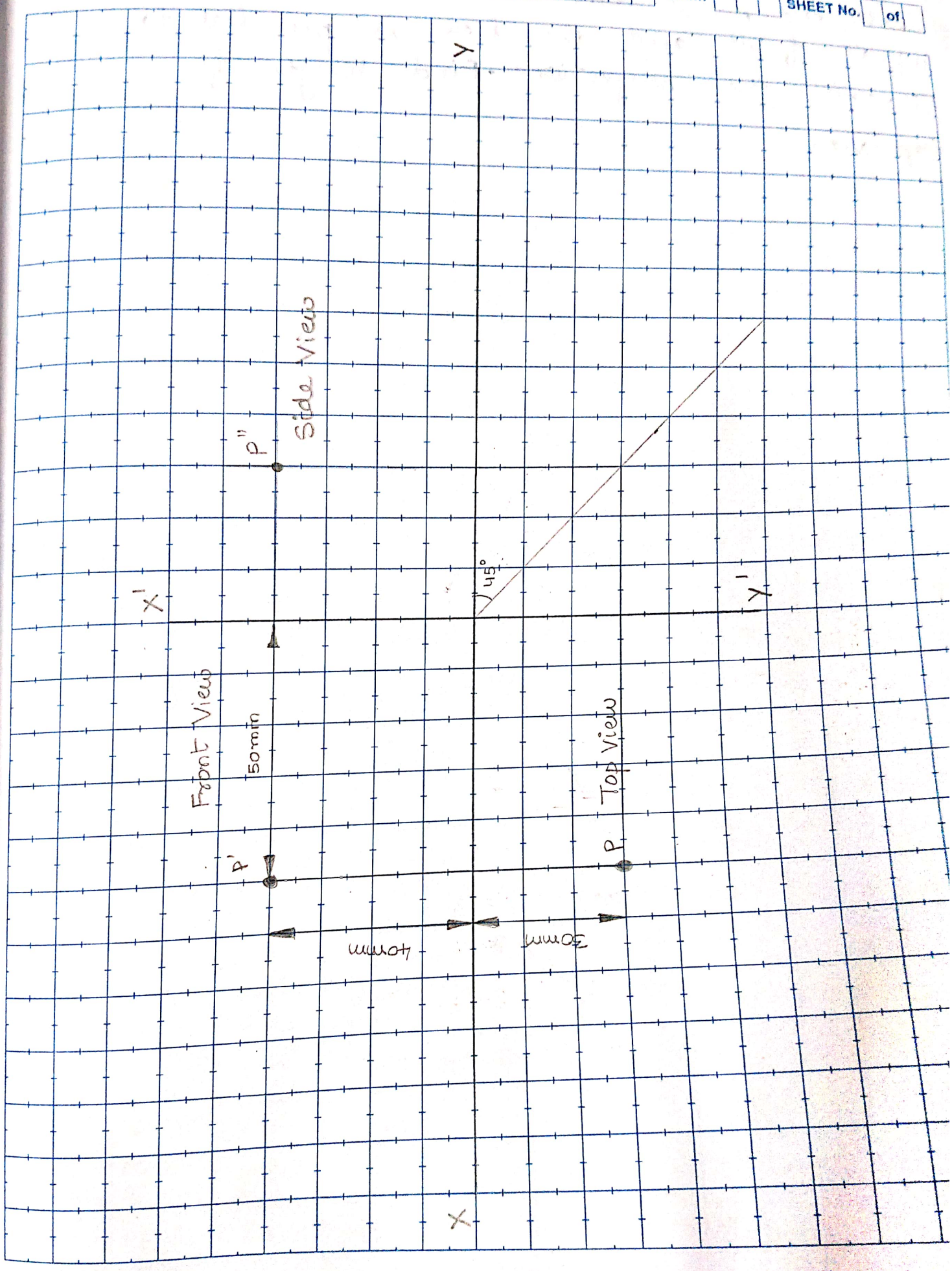

Date : 26/03/25

Scale : 1 Unit = 10 mm

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5 A 100 mm plane is inclined 30° to HP with end A is 30mm above HP and 40 mm infront of VP and the line is parallel to VP. Draw the projections. Find length of top view

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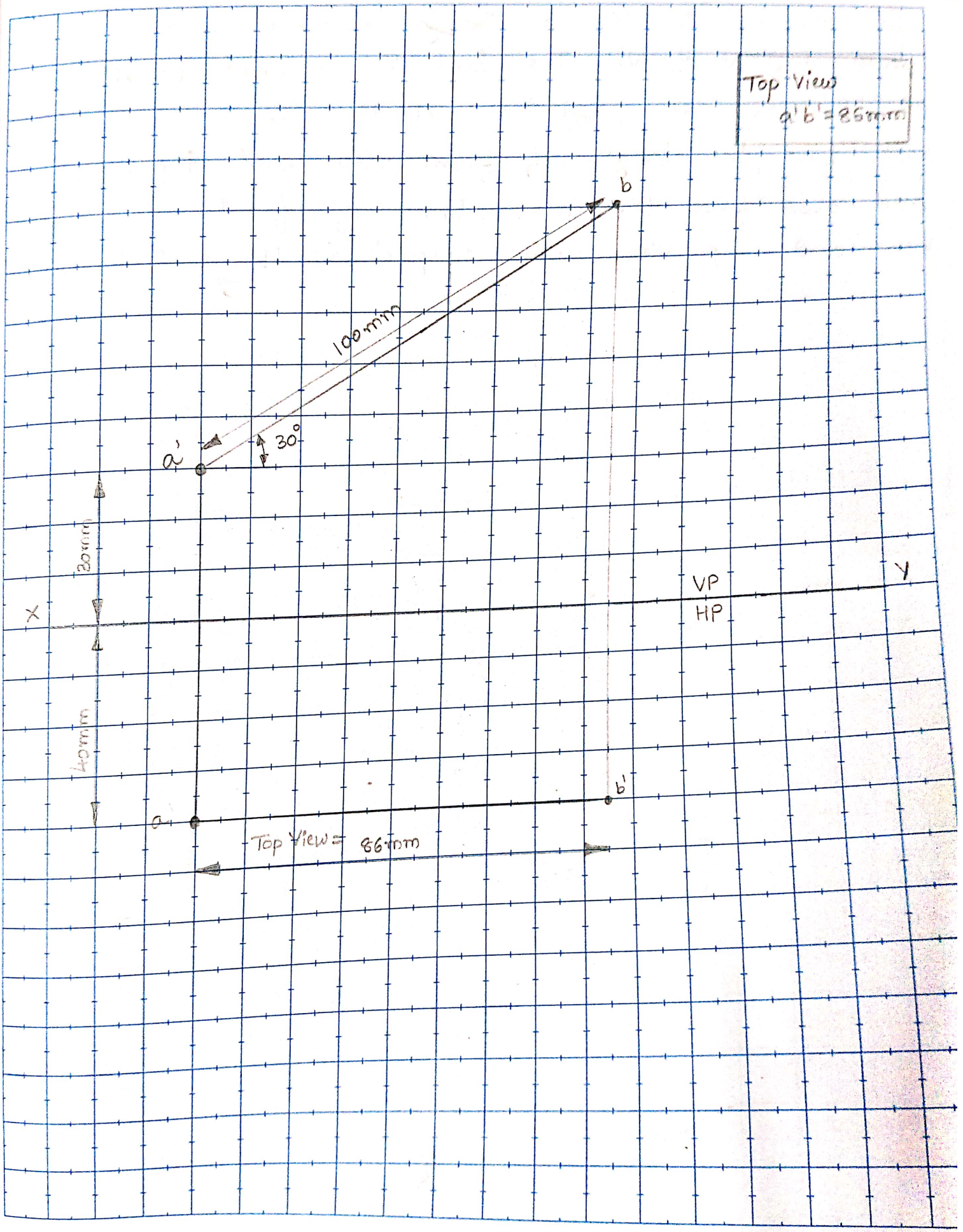

Date : 26/03/25

Scale : 1 Unit = 10 mm

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Line inclined to HP and VP

⑥ An 80mm line is inclined at 30° to HP with one of its end 'a' 30mm above HP and 40mm infront of VP. The line is inclined to VP at 45°. Draw the projections of the line and find the length of front view and top view and also find the inclinations of front view and top view with respect to HP and VP

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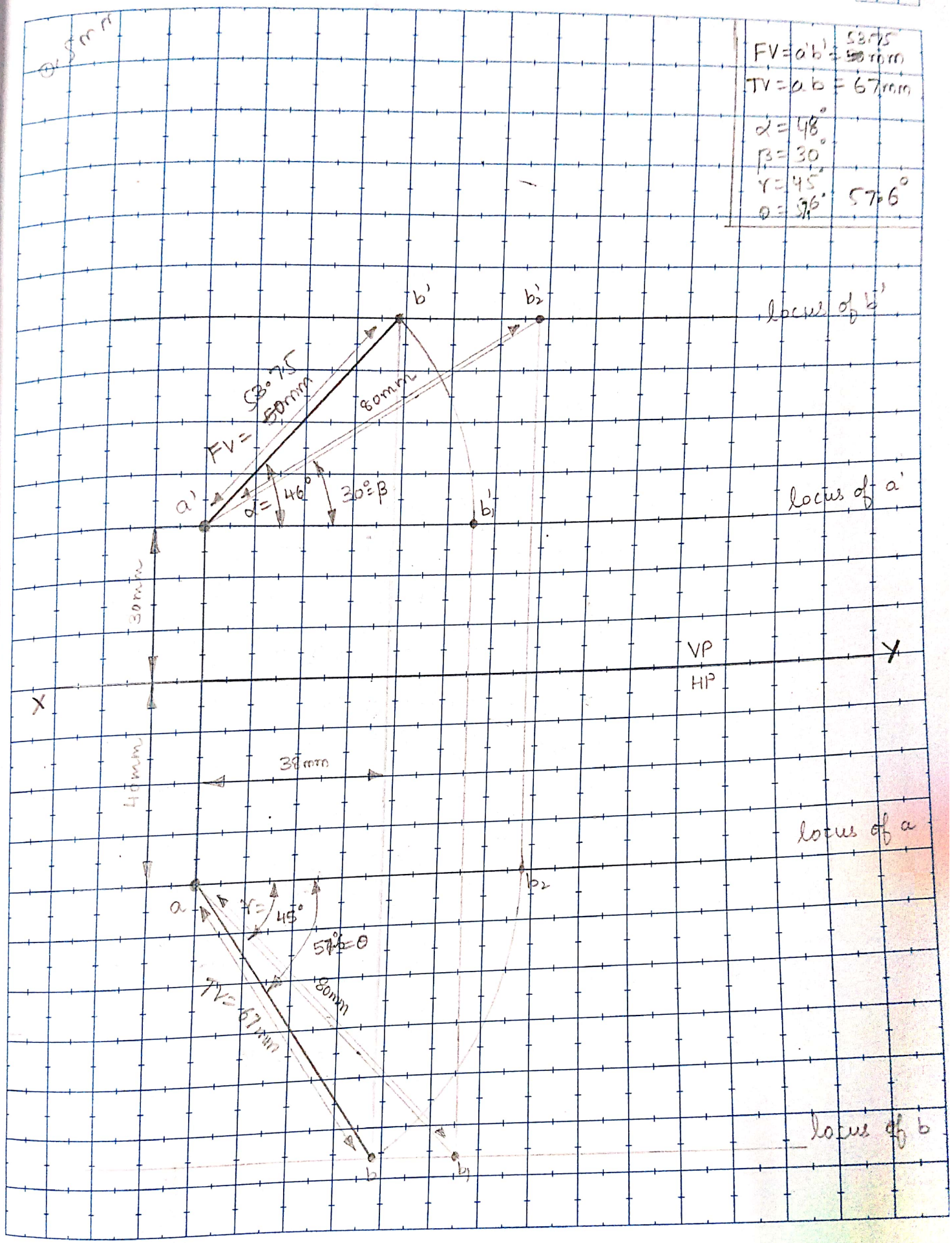

Date : 27/03/25

Scale : 1 Unit = 10 mm

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⑦ The line AB 60mm long has one of its extremities 20 mm infront of VP and 15mm above HP. The line is inclined at 25° to HP and 40° to VP. Draw its front and top views.

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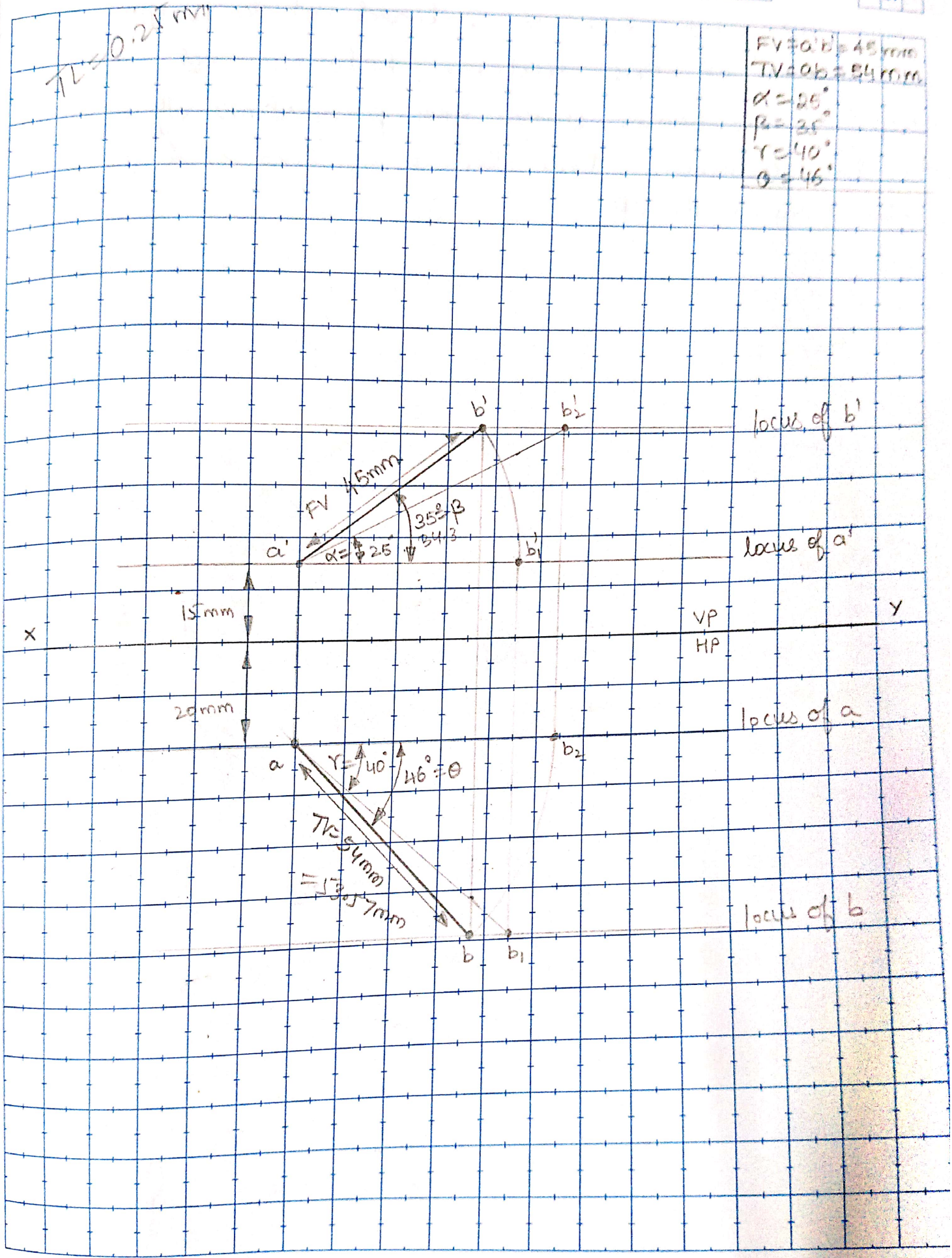

Date : 01/04/25

Scale : 1 Unit = 10 mm

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(5) A line has its end A 10 mm above HP and 15 mm infront of VP. End b is 55 mm above HP and line is inclined at 30° to HP and 35° to VP. The distance between end projectors is 50mm. Draw the projections of the line. Determine true length of line and inclinations with VP.

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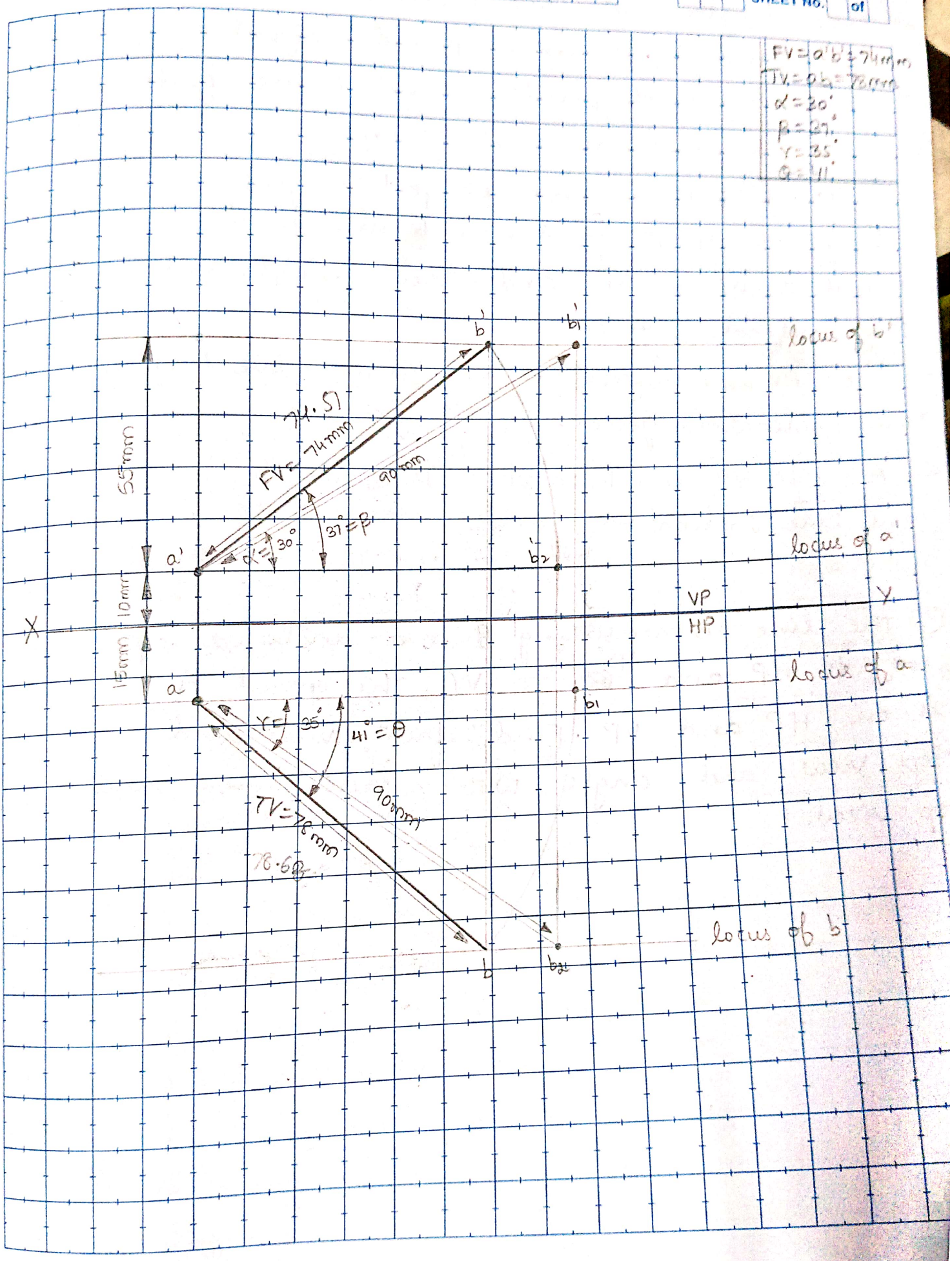

Date : 03/04/25

Scale : 1 Unit = 10 mm

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Note: Different Cases of problems on Lines

→ True length and True Inclinations are given and point A is above HP and infront of VP

→ The reference of points a and b are given and True inclination is given.

→ Distance between end projectors given (Reference of points a and b also given)

→ A is on HP and VP and True length and True Inclinations given.

→ A on HP and infront of VP and True length, True Inclinations given.

→ A is on HP and B on VP, True length and True Inclinations given.

(1) The line AB measuring 90mm inclined at 30° to HP and 45° to VP. The point A is on HP and VP. Find front view and top views and angle W.R.T front view and top views.

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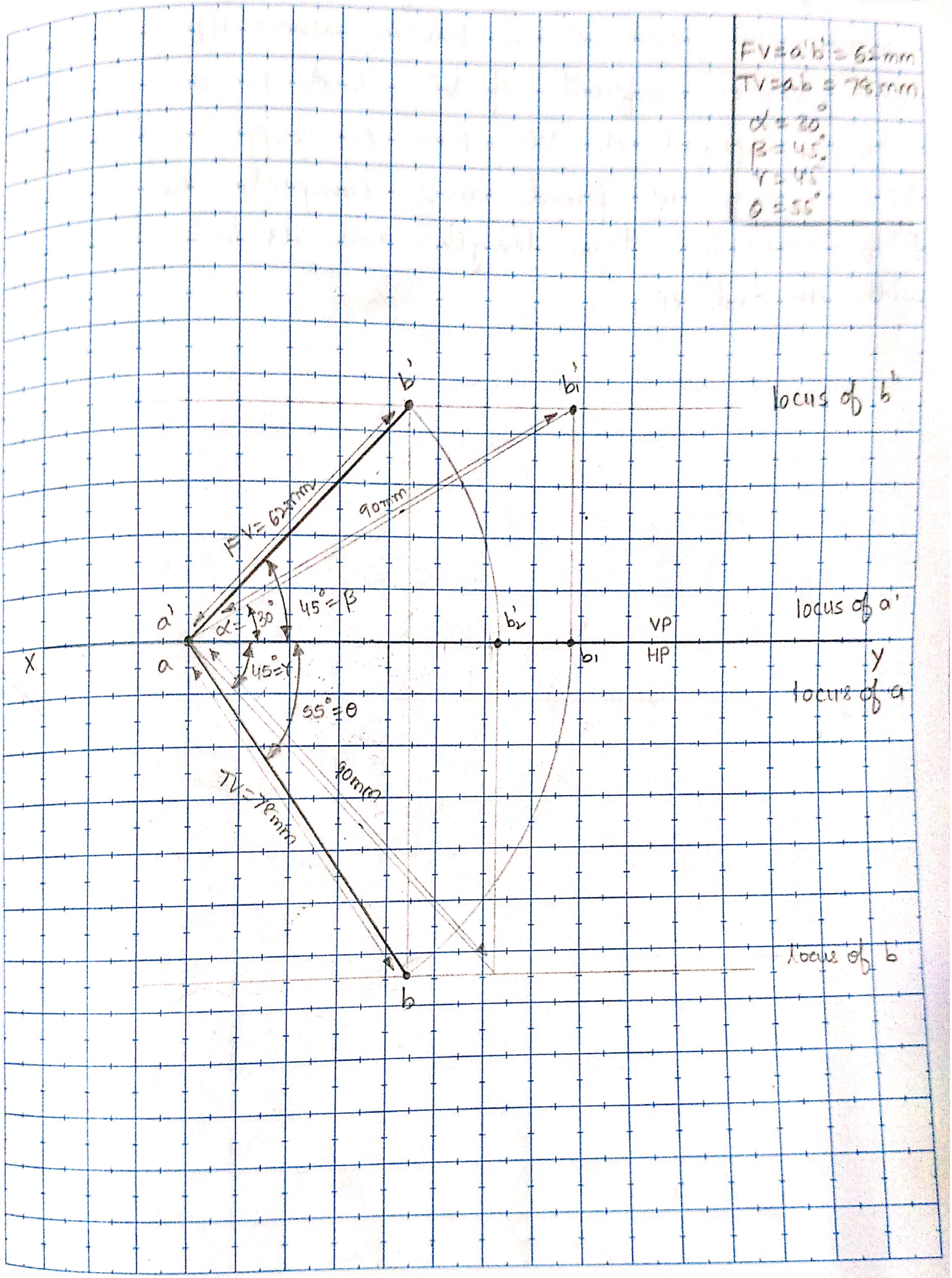

Date : 08/04/25

Scale : 1 Unit = 10 mm

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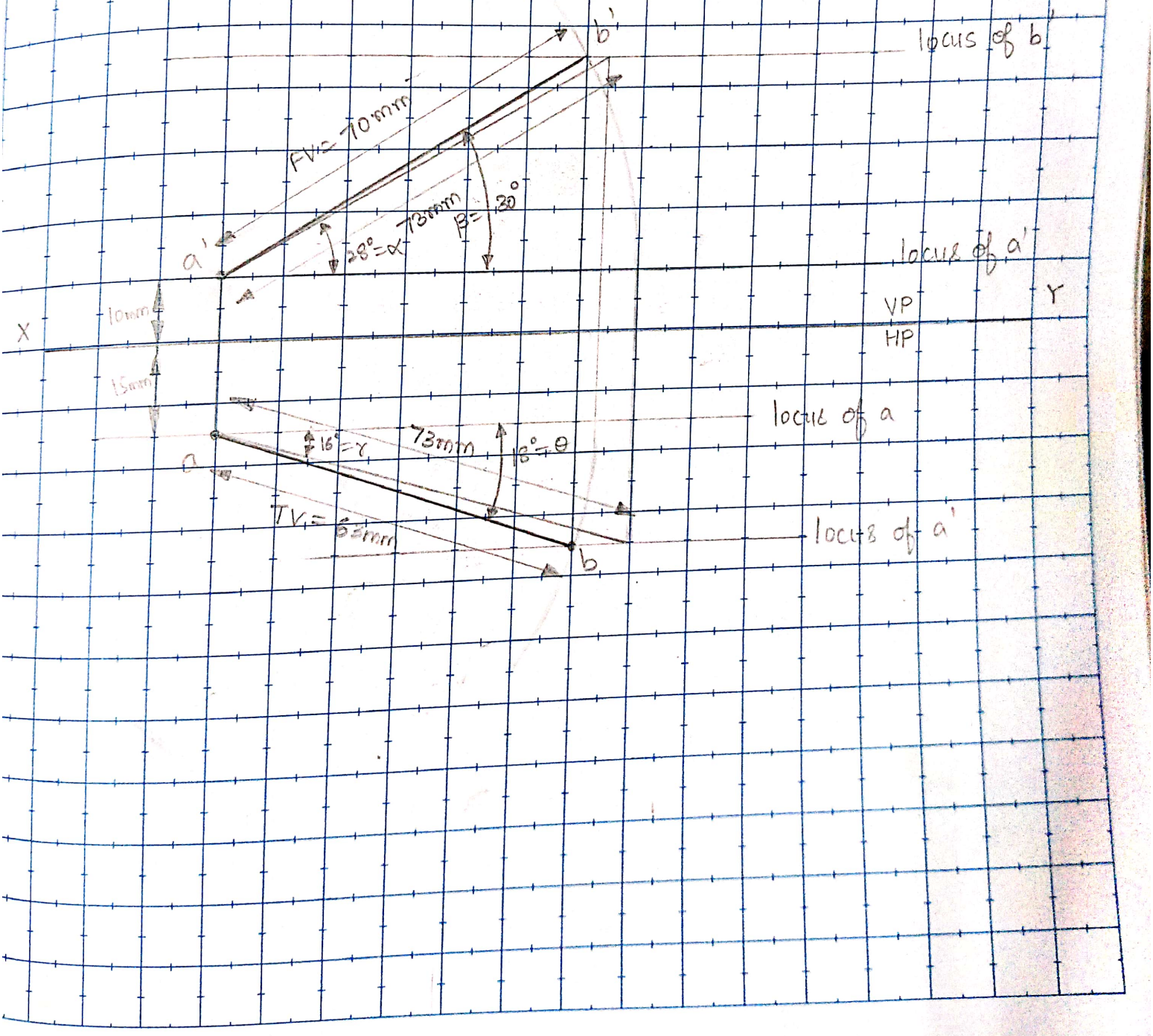
(10) The distance between end projectors through the end points of line AB is 60mm. The end A is 10mm above HP and 15mm infront of VP. End B is 35mm infront of VP. Line AB appears to be 70mm long in front view. Complete the projections. Find true length and its inclinations with HP and VP

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

FV = a'b' = 70mm
TV = ab = 62mm
$\alpha = 28^\circ$
$\beta = 30^\circ$
$\gamma = 16^\circ$
$\theta = 18^\circ$
TL = 73mm

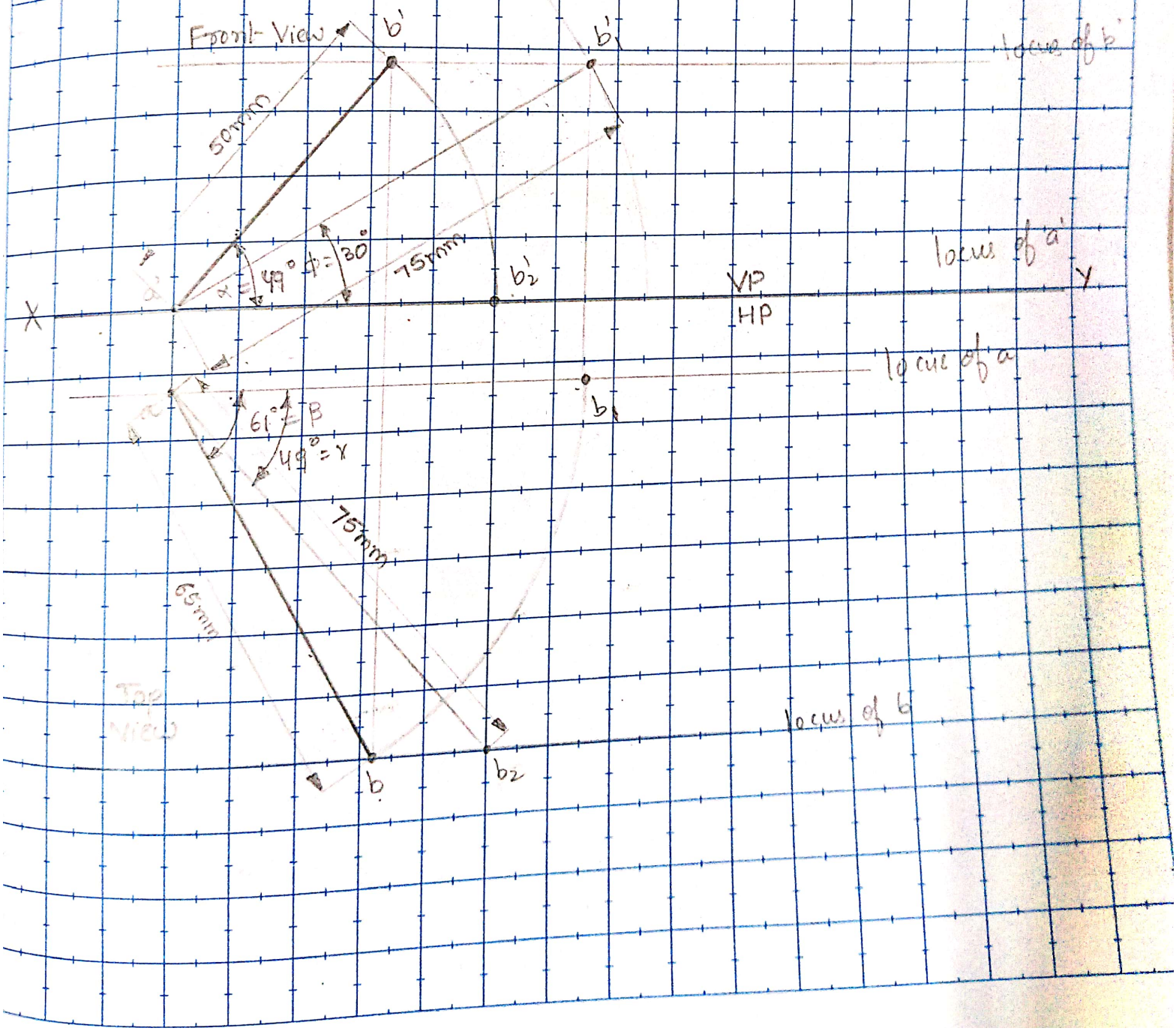


(11) The top view of a 75mm long line AB measures 65mm while the front view is 50mm. Its one end A is in HP and 12mm infront of VP Draw projection of AB. Determine inclinations with HP and VP.

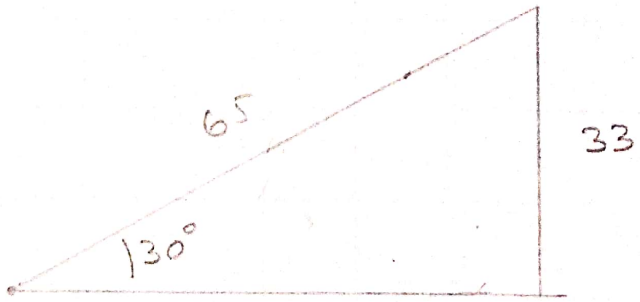
USN | SUB. CODE | SEM. | SHEET No. | of

ab = TV = 65mm
a'b' = FV = 50mm

$\alpha = 49°$
$\beta = 61°$
$\phi = 30°$
$\gamma = 49°$

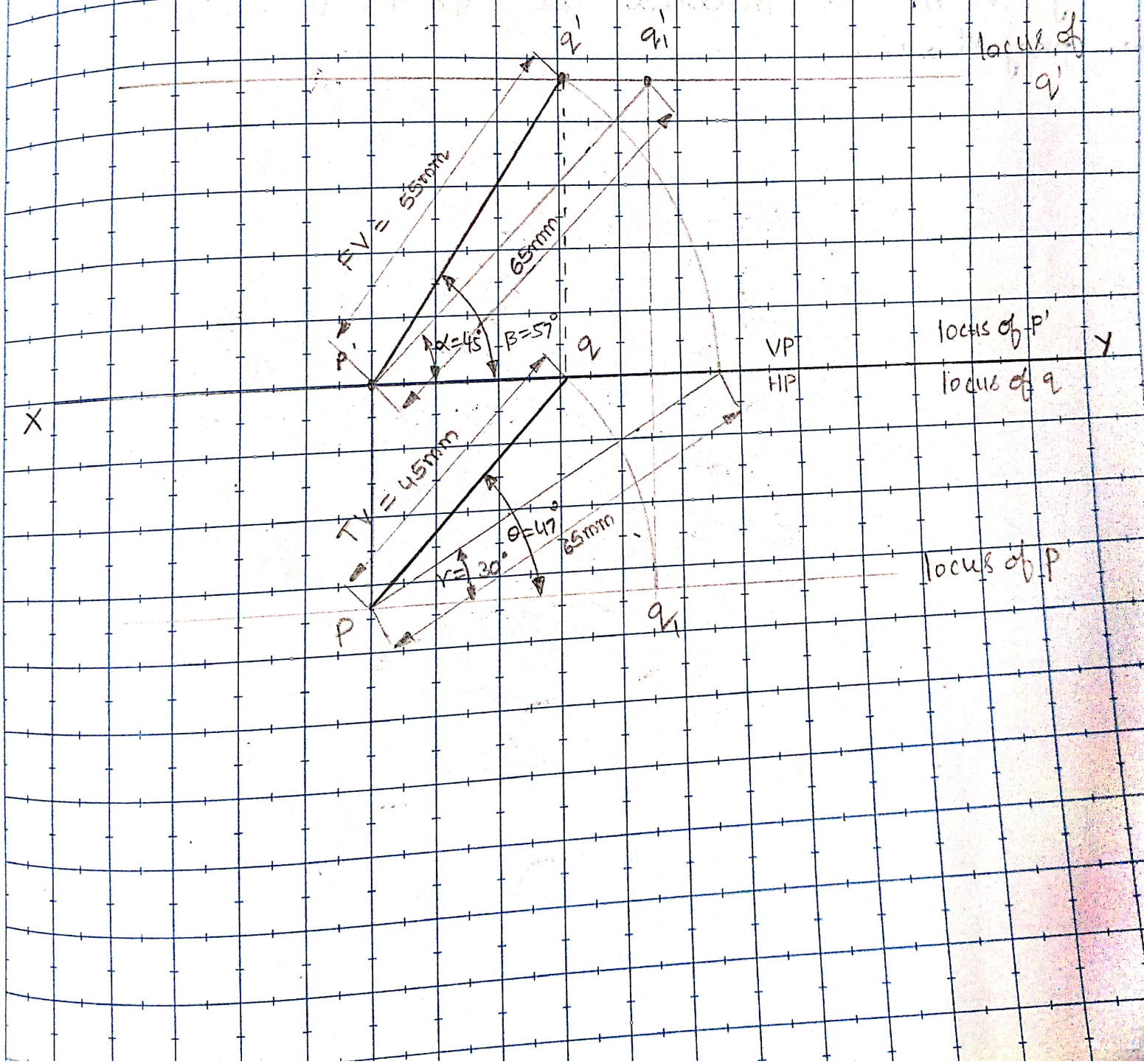


(12) A straight line PQ is inclined at 45° to HP and 30° to VP. The point P is in HP and point Q is in VP. The length of a straight line is 65mm. Draw the projections of the line and find the inclinations.



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

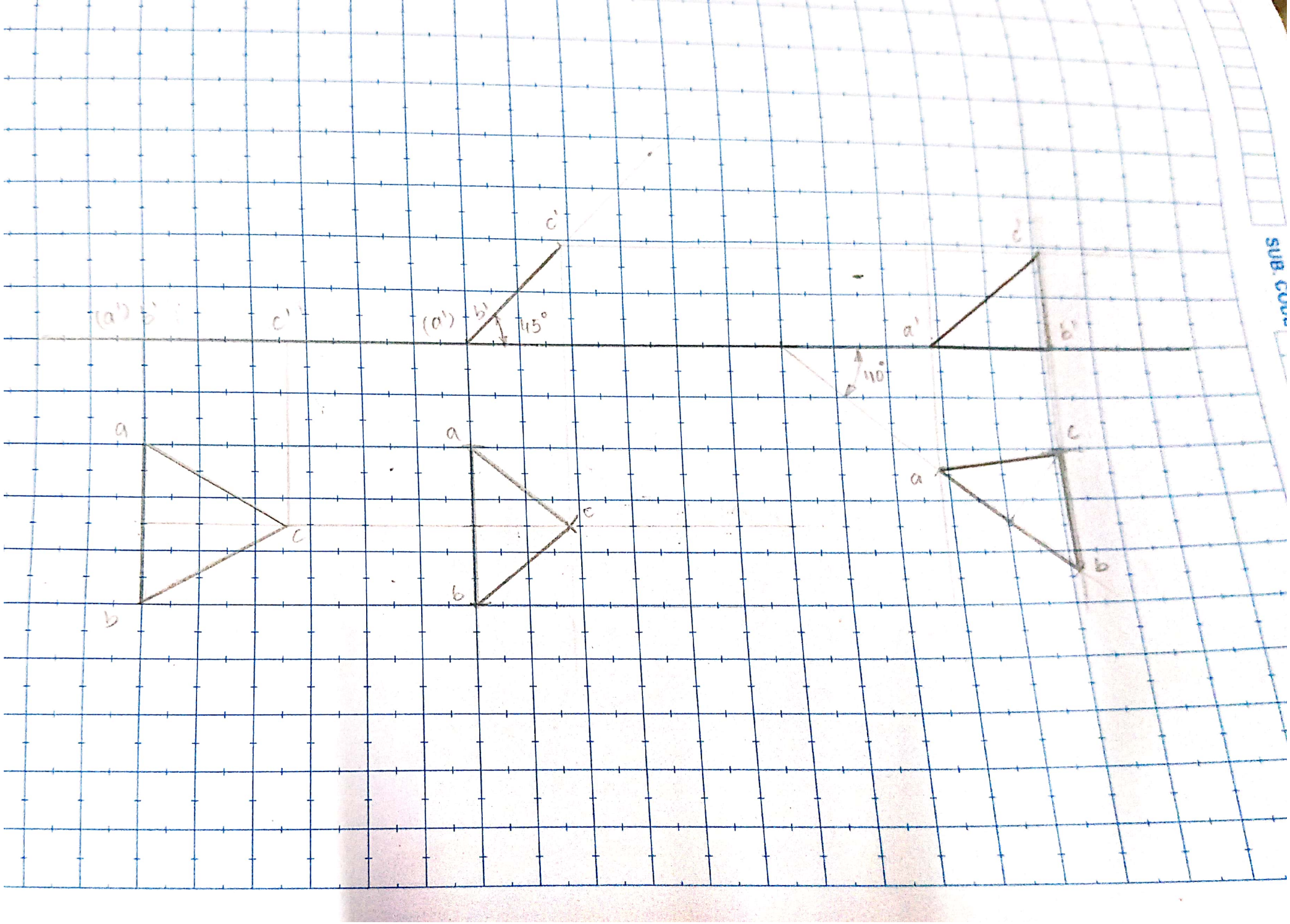
FV = p'q' = 55mm
TV = pq = 45mm
α = 45°
β = 57°
γ = 30°
θ = 47°



Projection of Planes

1] Edge or Corner resting on HP
2] Inclined to HP (Lamina inclined)
3] Lamina or edges inclined to VP

(13) A triangular lamina of 30mm side is resting on one of its base edge on HP and the lamina is inclined at 45° to HP. The edge which is resting on HP is inclined at 40° to VP. Draw the projections.



(14) 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. The edge on which it rests is inclined at 45° to VP. Draw projections.

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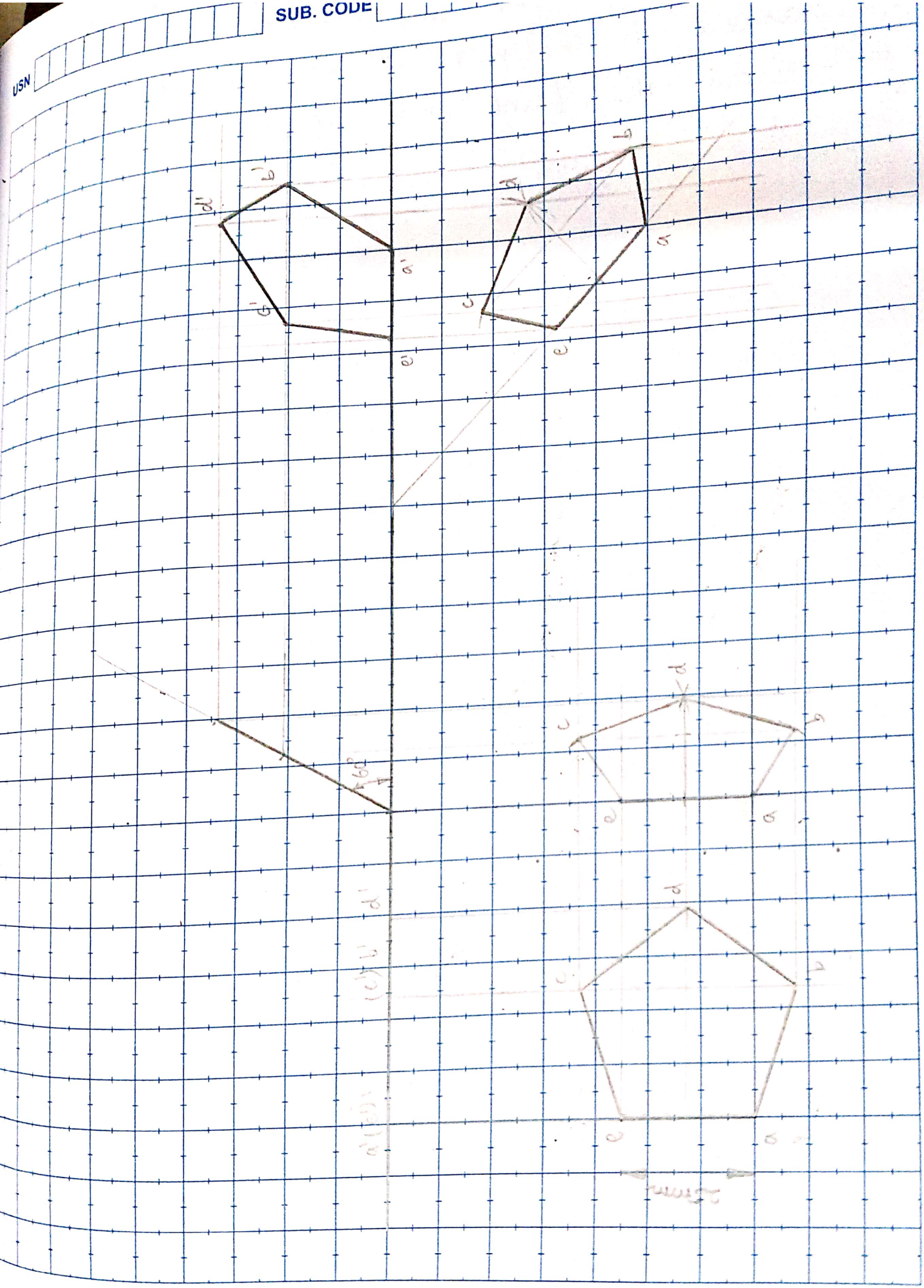

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Scale : 1 Unit = 10 mm

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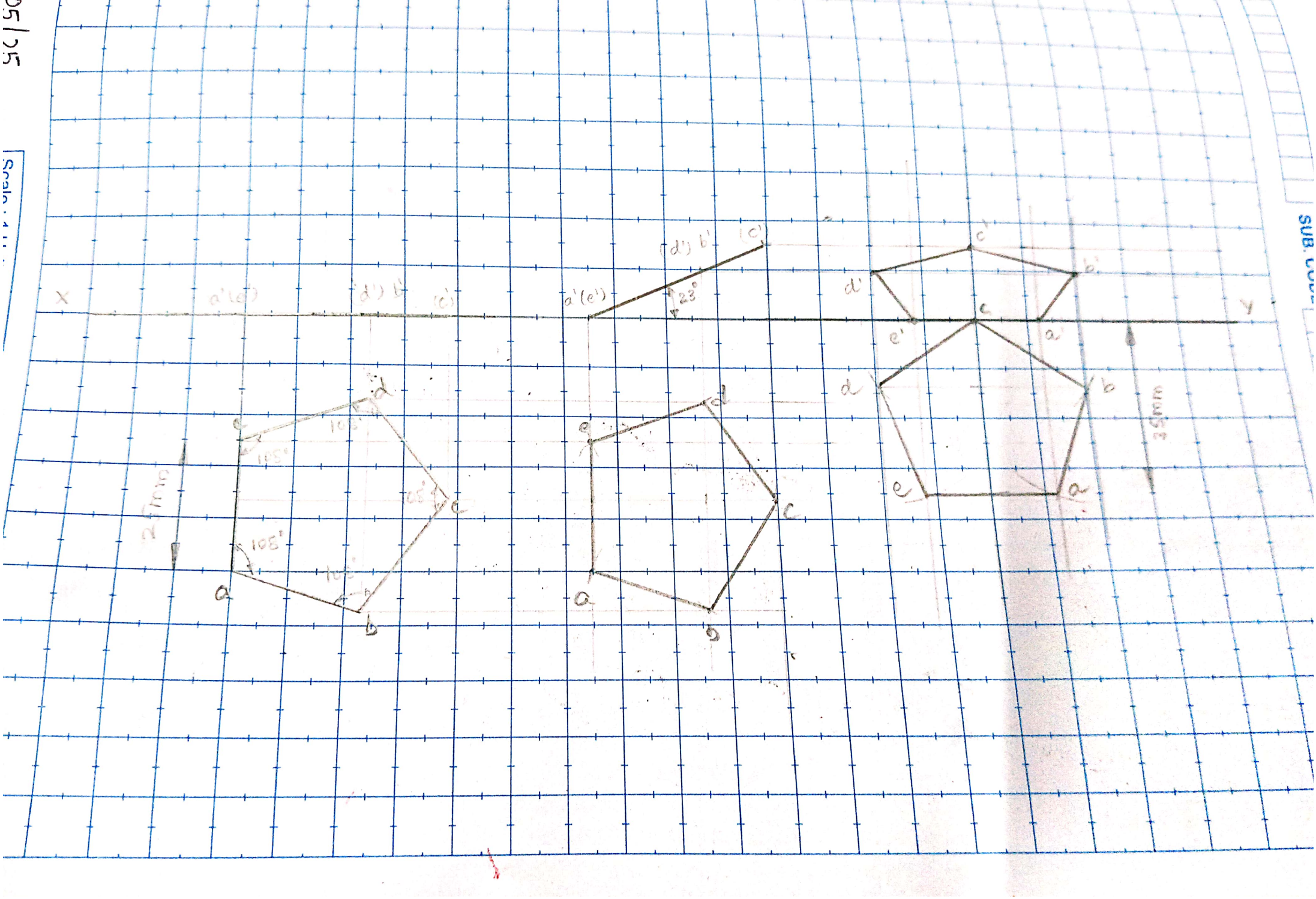
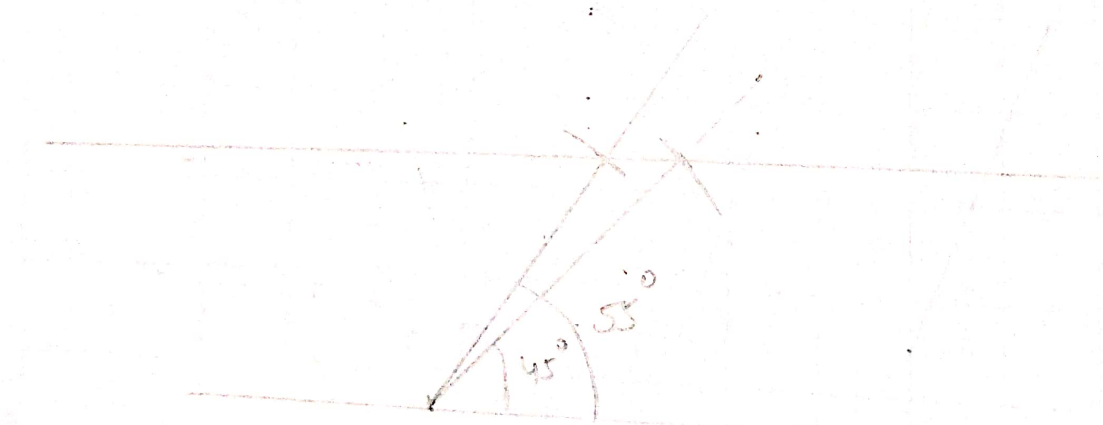
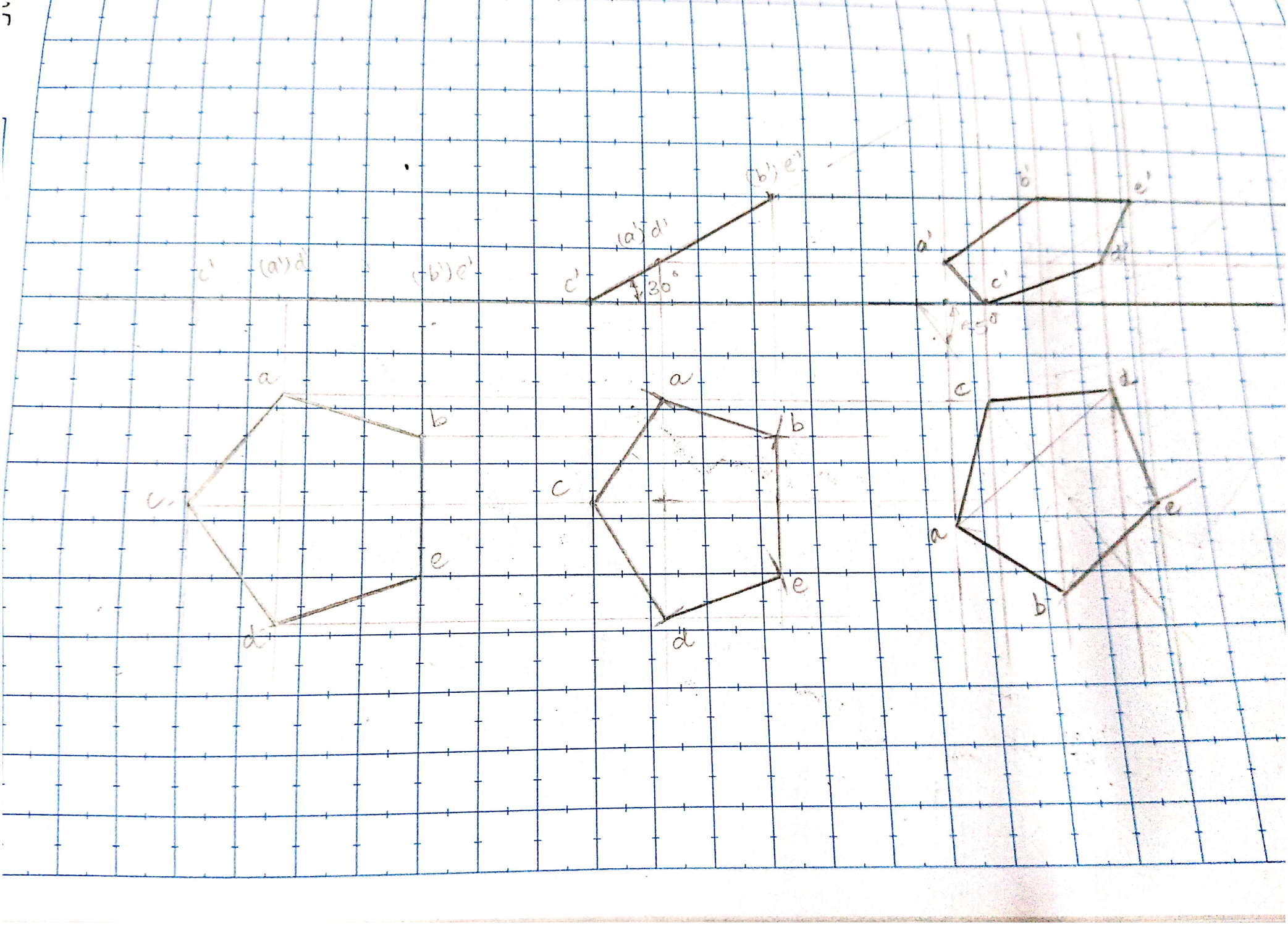
Q-14

(15) A pentagonal lamina of side 25mm is resting on one of its edges on HP. with one corner opposite to that edge touching the VP. The edge is parallel to VP and the corner which touches the VP is at height of 15mm above HP. Draw projections of lamina and determine inclinations of lamina with HP and distance at which the parallel edge lies from VP.

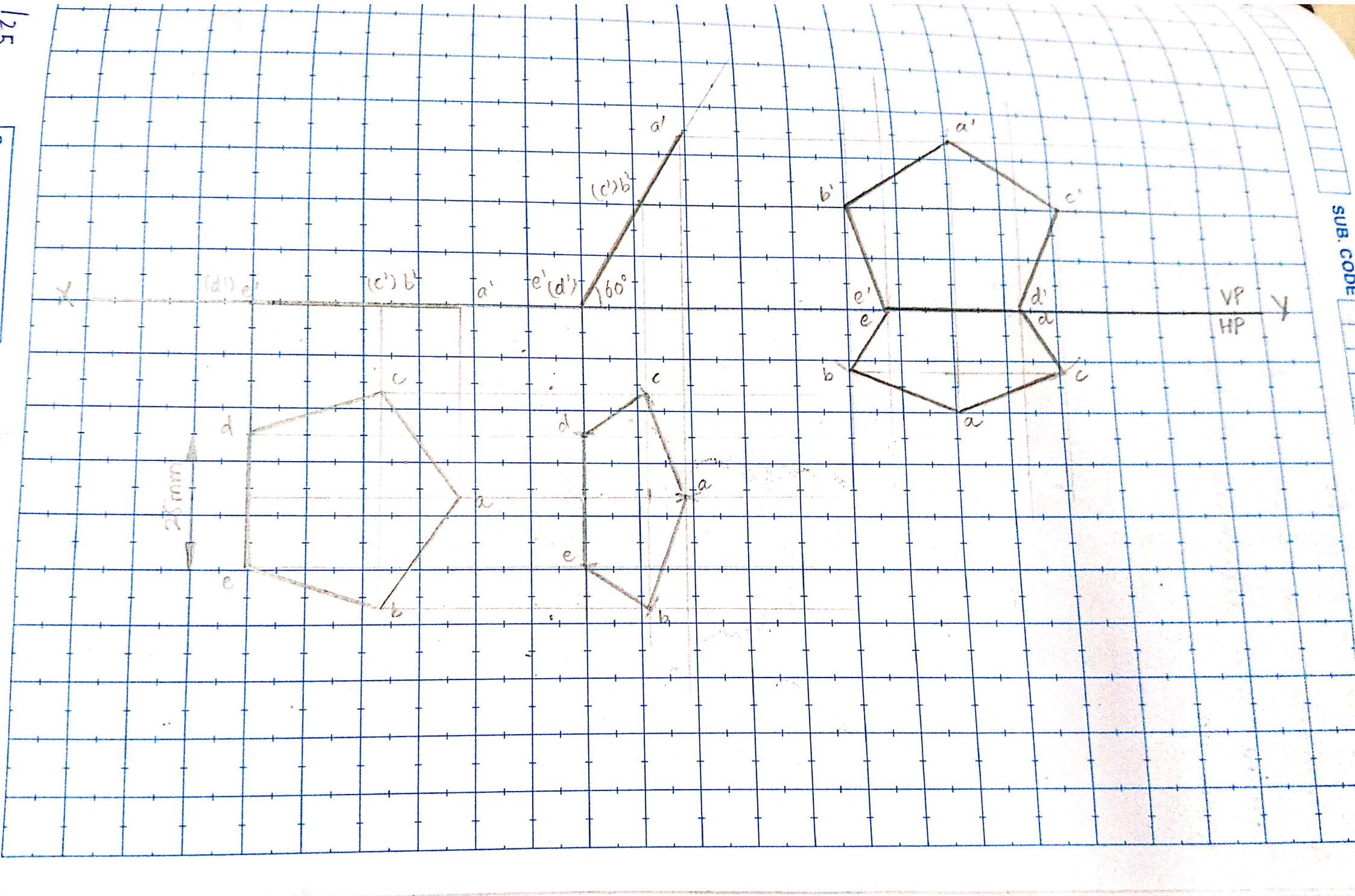


16 A pentagonal lamina having edges 25 mm is placed on of its corner on HP such that the perpendicular bisector of the edge passing through the corner on which the lamina rests is inclined at 30° to HP and 45° to VP. Draw Front and Top views of lamina.





17. A pentagonal lamina of side 25mm is having a side both on HP and VP. The surface of the lamina is inclined at an angle of 60° with HP. Draw the front and top views.



19. A pentagonal lamina of edge 25mm is resting on VP with one of its sides such that the surface makes an angle of 60° with VP. The edge on which it rests is inclined at 45° to HP. Draw projections.

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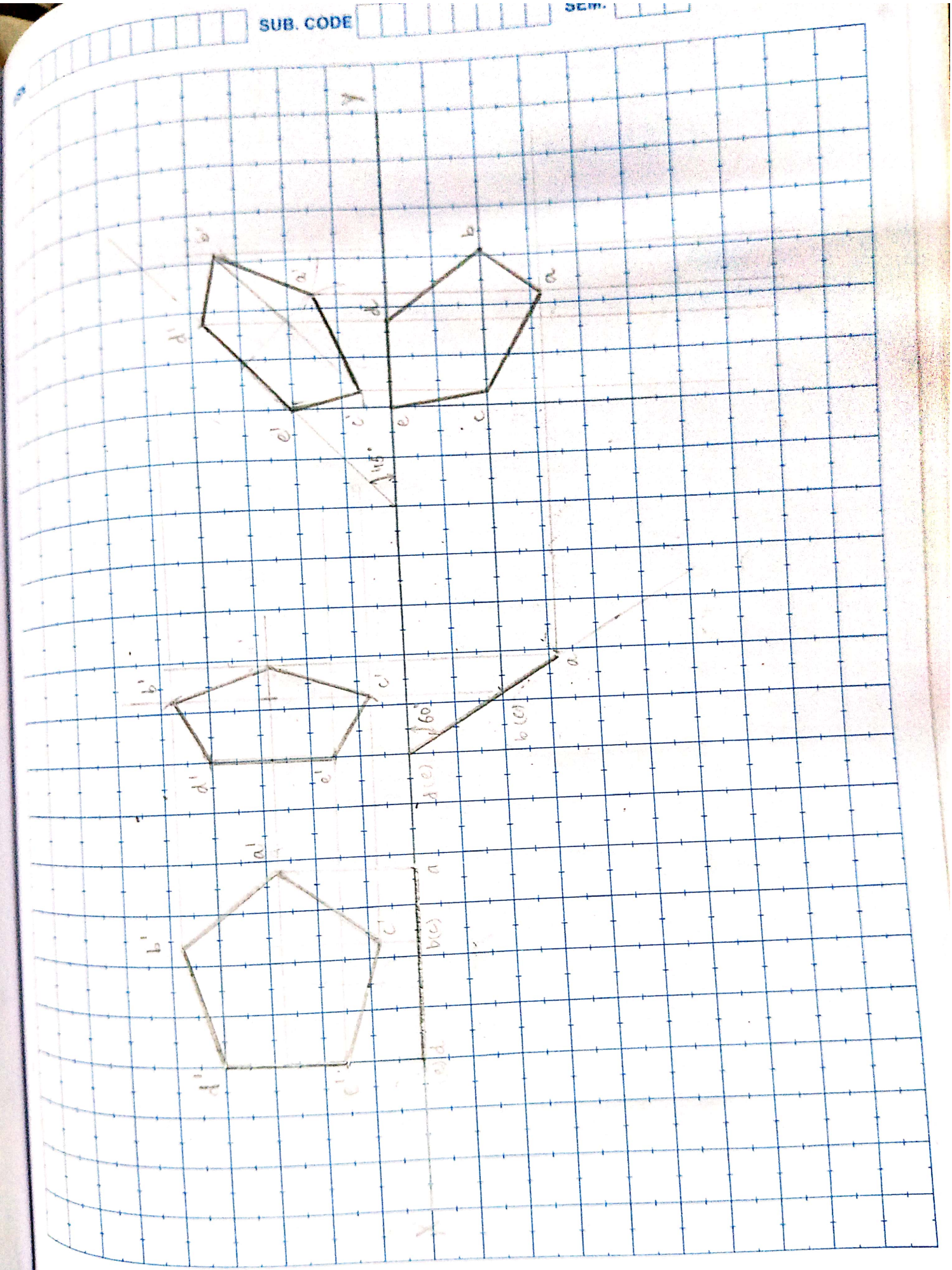

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Scale : 1 Unit = 10 mm

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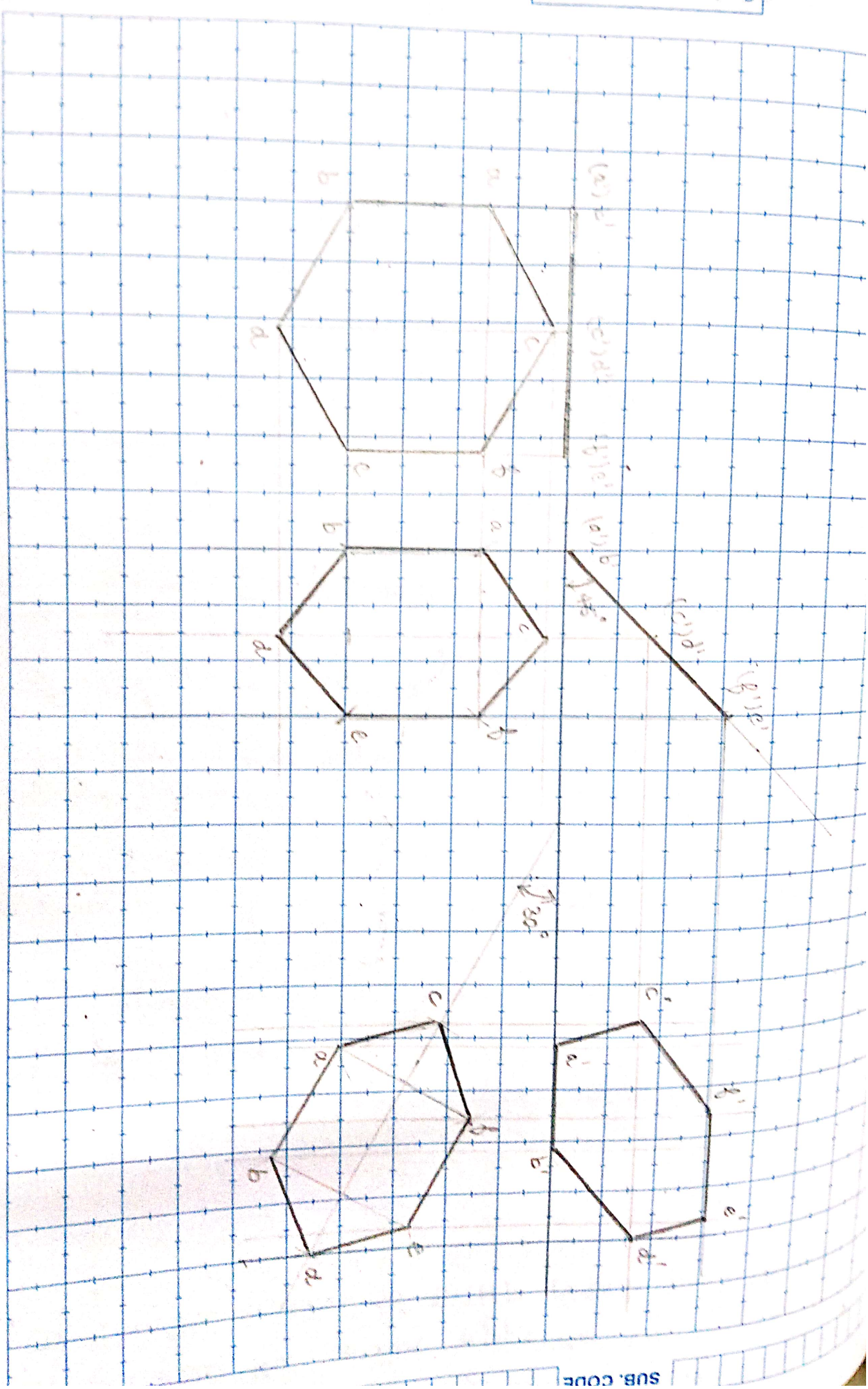
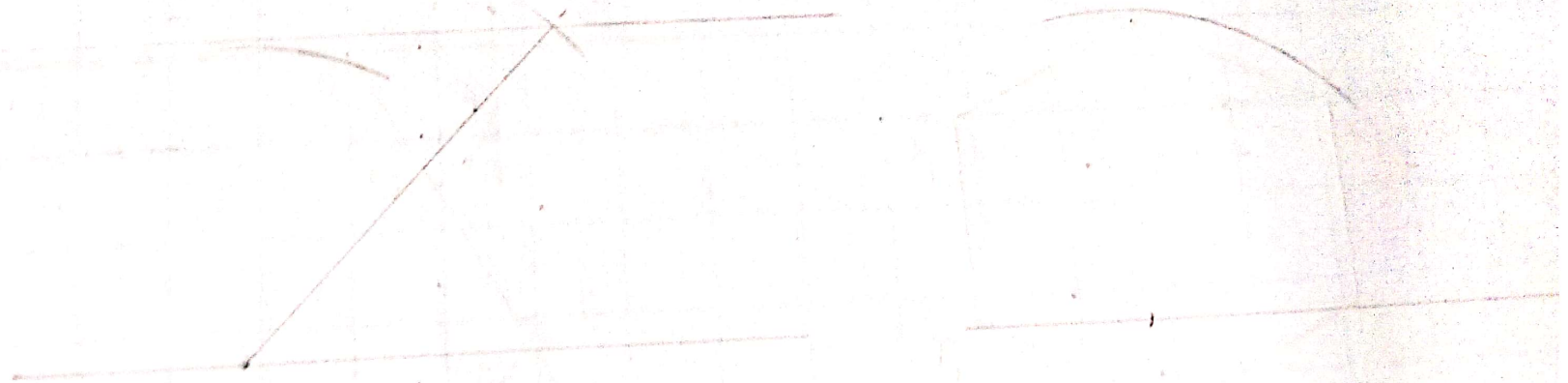
(19) A hexagonal lamina of side 25mm rests on one of its sides on HP. The lamina makes 45° to HP and side on which it rests makes 30° to VP Draw projections.



(21) Draw projections of circular plate of negligible thickness of 50mm diameter resting on HP on a point A. of the circumference. with its plane inclined at 45° to HP and the top view of diameter passing through the resting point makes 60° to VP



Scale : 1 Unit = 10 mm