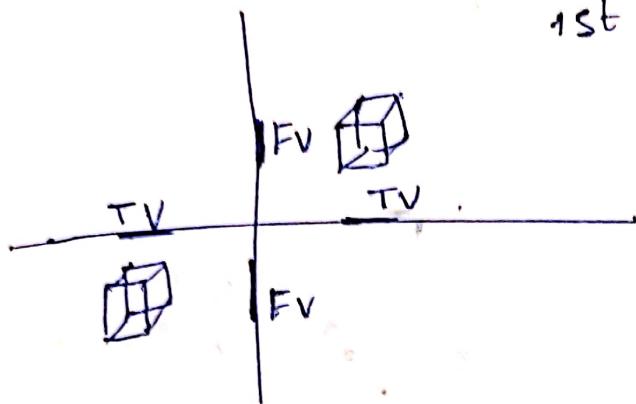


# Graphics.

1st Quad.

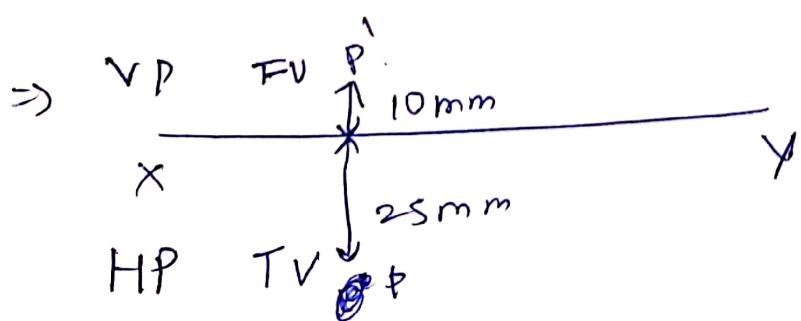
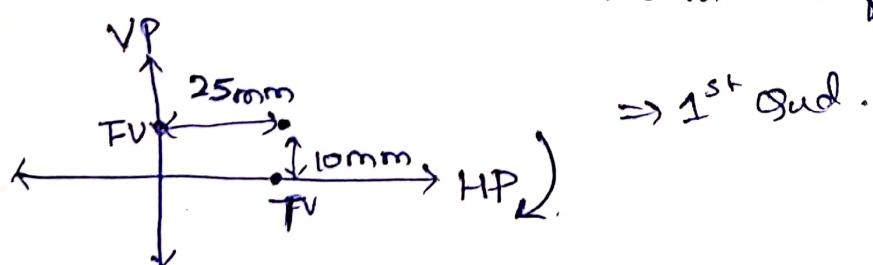


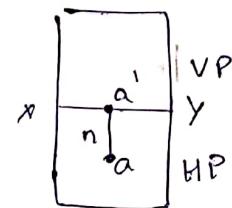
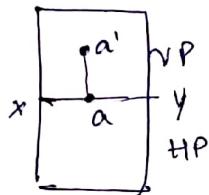
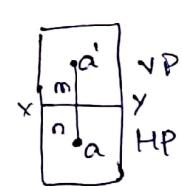
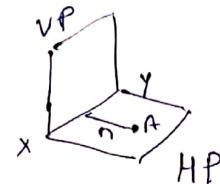
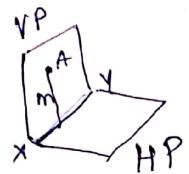
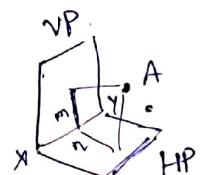
2nd Quad.

Object	Point A	Line AB
Its Top view	a	ab
Its Front view	a'	a'b'
Its Side view	a''	a''b''

Top views are projected on horizontal plane (HP)  
 Front views are projected on Vertical plane (VP)  
 Side views are projected on Profile plane (PP)

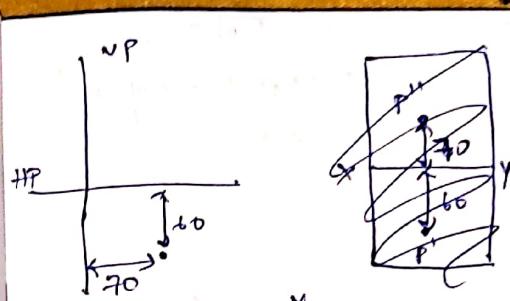
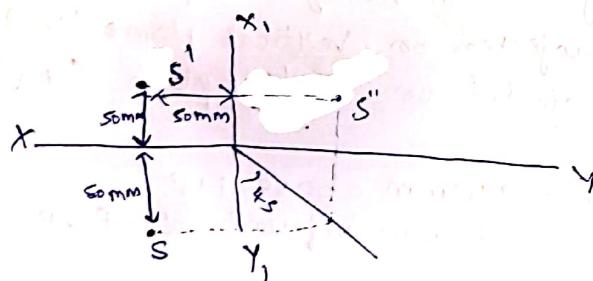
Example:- A point 'P' → 10mm above HP  
 25 mm in front of VP



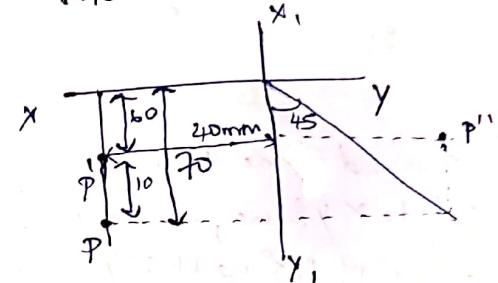


(b) Draw all the 3 views.

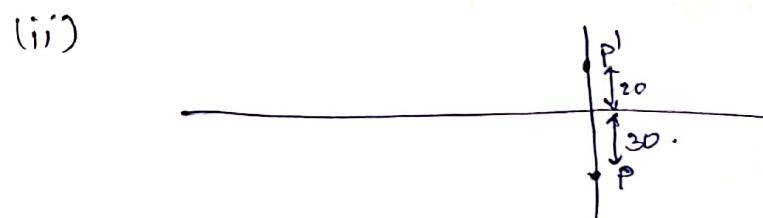
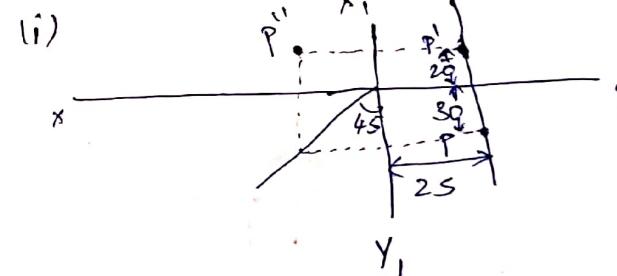
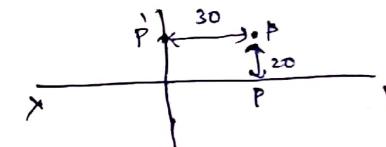
(b) A point S is in 1<sup>st</sup> quadrant & equidistant ~~from~~ of 3 principal planes. Draw the projections of the point. Draw all the three views of point.



Bottom below HP  
70 mm in front VP  
40 mm from RPP

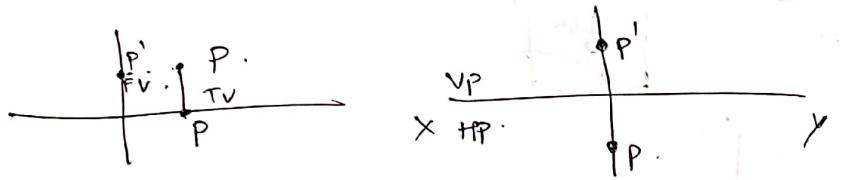


30mm in front of VP  
20mm above HP  
25mm

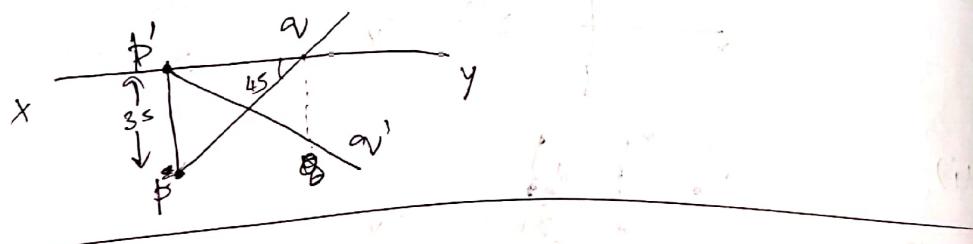
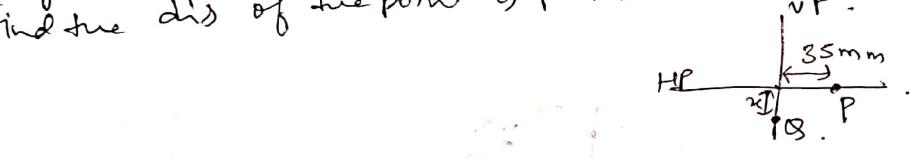


(c)

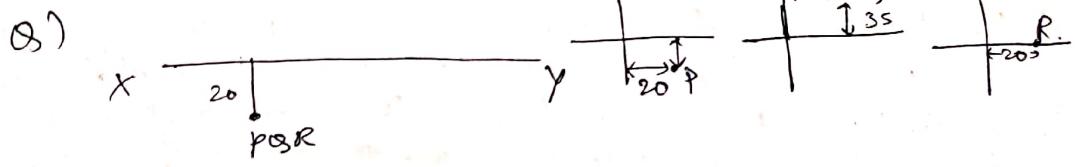
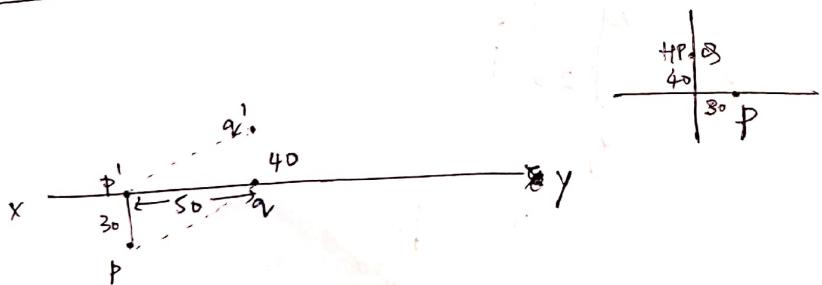
Q) A point S is in the 1<sup>st</sup> quad & equidistant of 50 mm from all the three principal planes. Draw the projections of the point. Draw all the three views of the point.



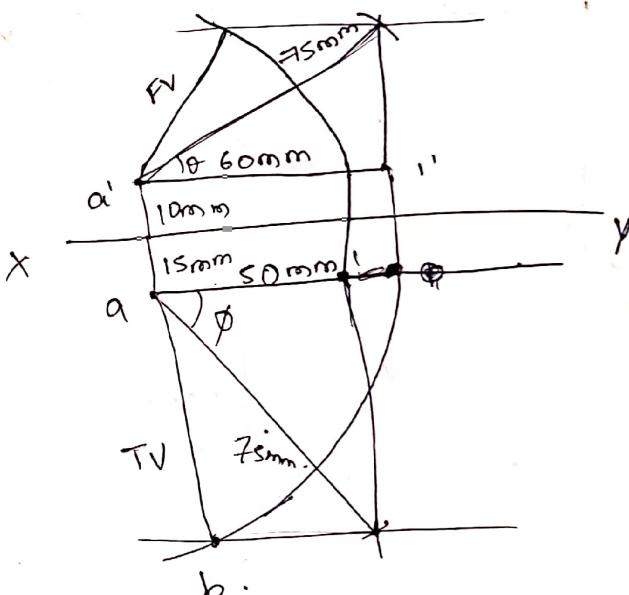
Q) A point P & Q are shown and the line joining their F.V makes an angle  $30^\circ$  to X-Y line, while the line joining their T.V makes an angle of  $45^\circ$  with X-Y line. Find the dis of the point Q from HP.



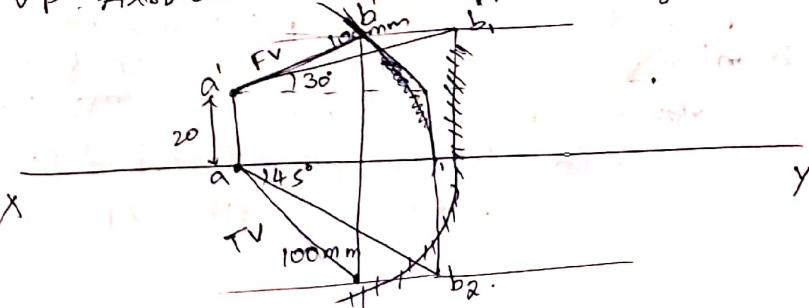
Q)



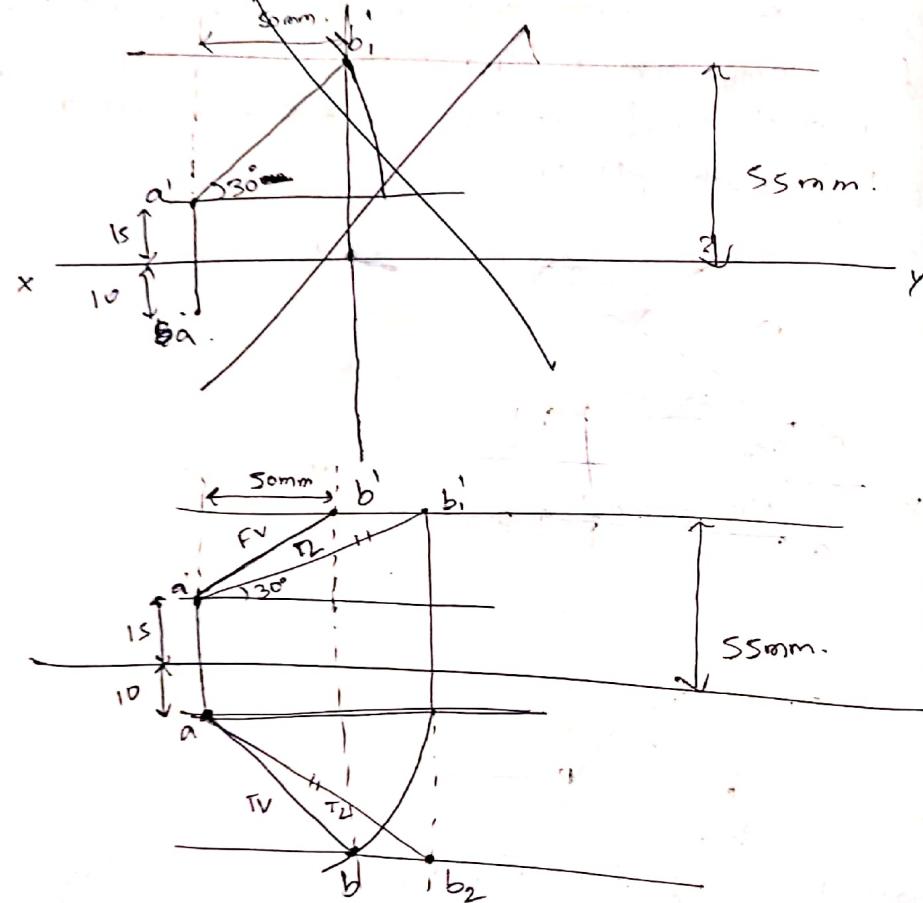
Q) Line AB is 75 mm long. Its FV & TV is 50 & 60 mm. End A is 10mm above H.P & is 30m in Front of V.P. Draw the projections of line AB if end B is in first quad. Find angle with H.P & V.P.



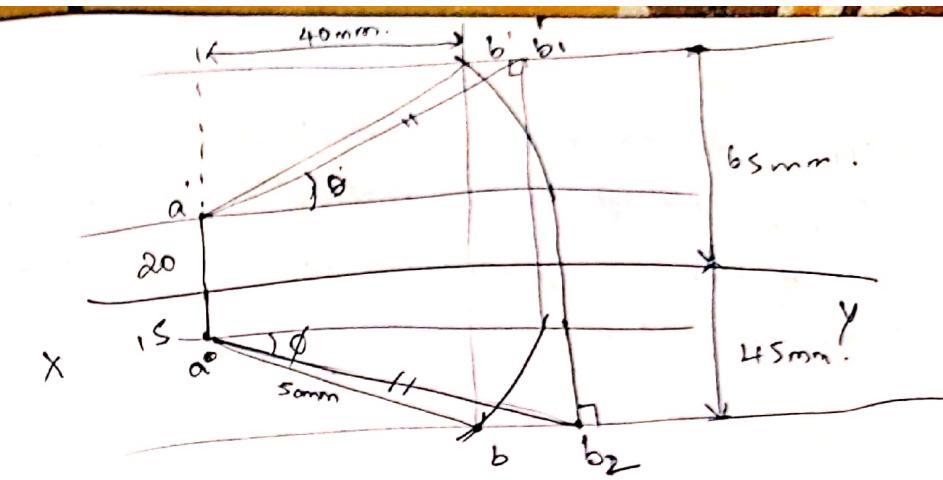
Q) Draw the projections of a line AB 100 mm long inclined  $45^\circ$  to VP &  $30^\circ$  to HP. One end of the line is 20 mm above HP & in the VP. Also determine the apparent length and inclinations.



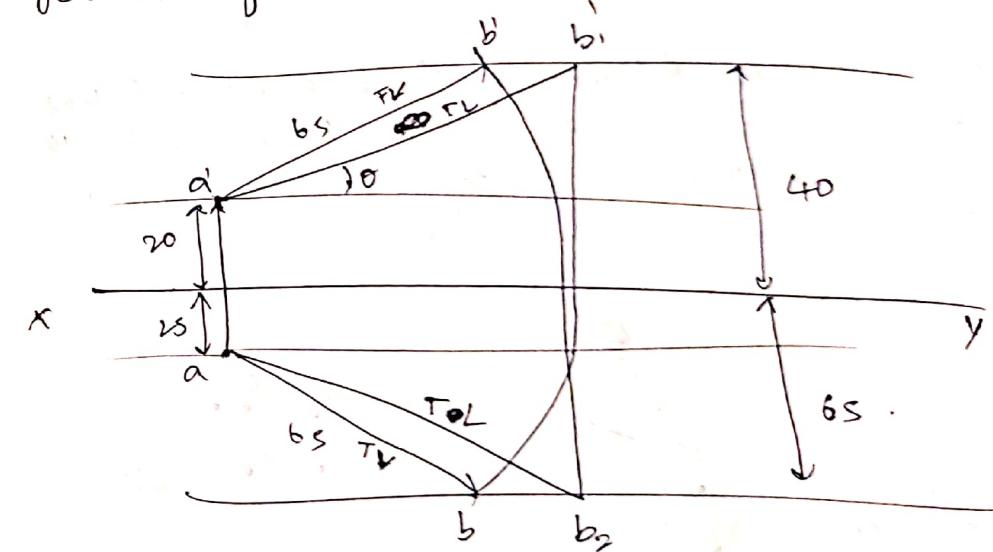
Q) A line has its end A 15mm above HP & 10mm in front of VP. The end B is 55mm above HP & the line is inclined at 30° to HP. The distance b/w the end projectors is 50mm. Draw the projections of the line & determine the true length of the line and its inclination with VP.



Q) The dist b/w the end projectors through the end points of a line AB is 40mm. The end A is 20mm above HP and 15mm in front of VP. The end B is 45mm in front of VP and 65mm above HP. The line AB appears 50mm long in the top view. Complete the projections. Find the TL of the line & its inclination with HP & VP.

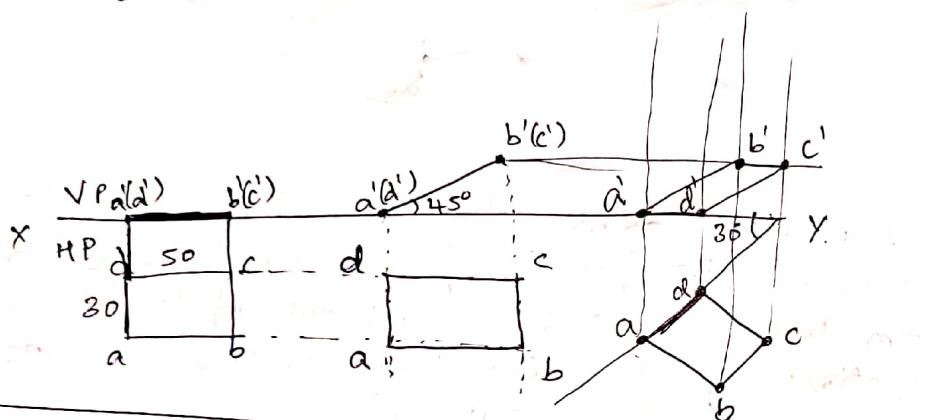


Q) A line AB, 65 mm, has its end A 20mm above HP & 25 mm in front of the VP. The end B is 40 mm above HP & 65 mm in front of VP. Draw the projections of AB & show its inclination with HP & VP.

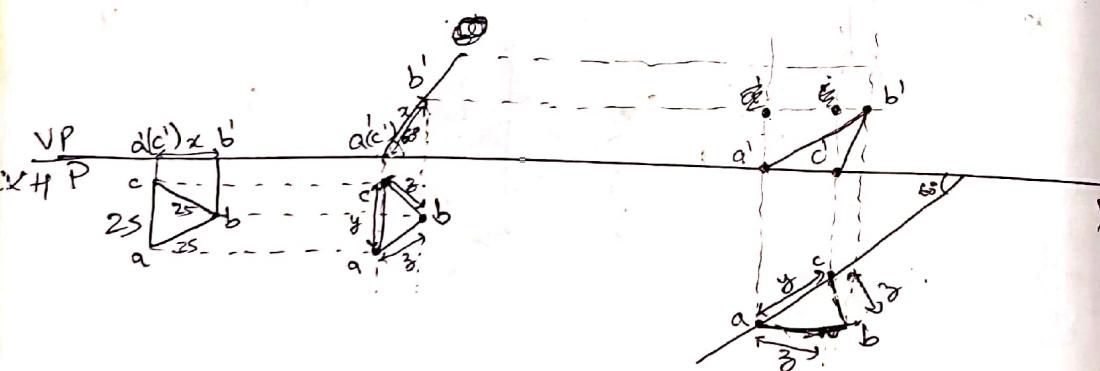


## Planes

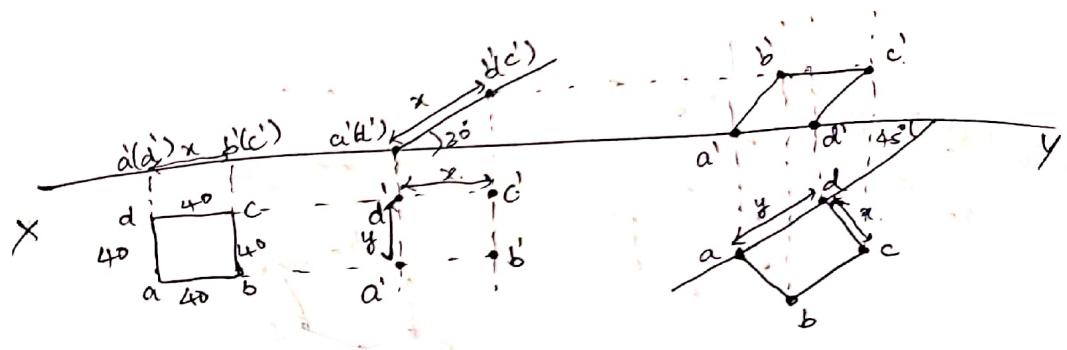
- Q) Rectangle 30mm × 50 sides is resting on HP on one small side which is  $30^\circ$  inclined to VP, while the surface of the plane makes  $45^\circ$  inclination with H.P. Draw its pros.



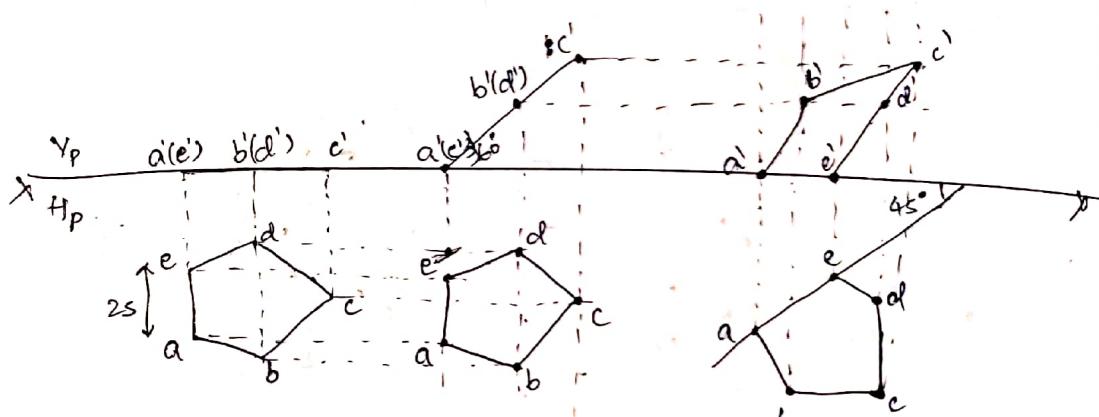
- Q) An equilateral triangle lamination of side 25mm side lies with one of its edges on HP such that the surface of the triangle is inclined to HP at  $60^\circ$ . The edge on which it rests is inclined to VP at  $60^\circ$ . Draw the pros.



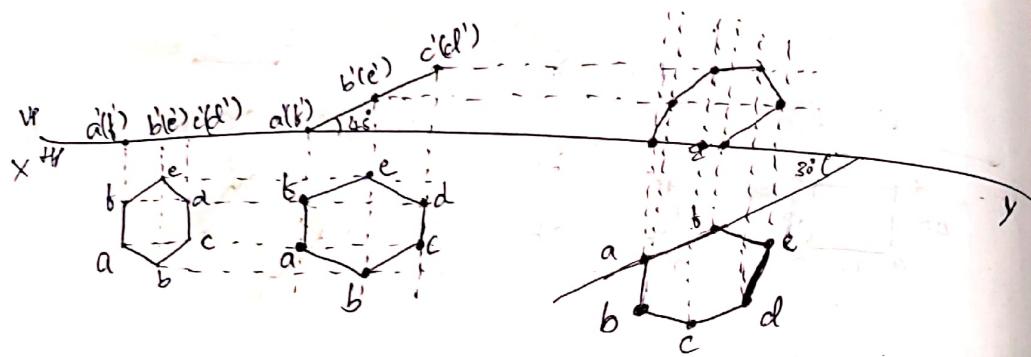
- Q) A square laming of 40 mm side rests on one of its sides on HP. The lamina makes  $30^\circ$  to HP and the side on which it rests makes  $45^\circ$  to VP. Draw its pros.



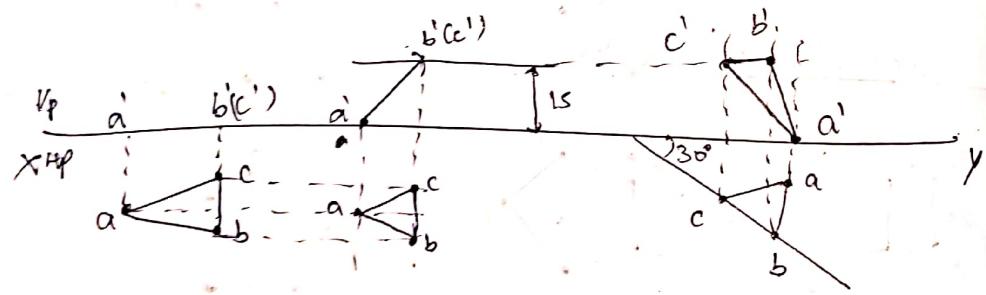
- Q) A pentagonal lamination of edges 25mm resting on HP with one of its sides such that the surface makes an angle of  $60^\circ$  with HP. The edge on which it rests is inclined at  $45^\circ$  to VP. Draw its pros.



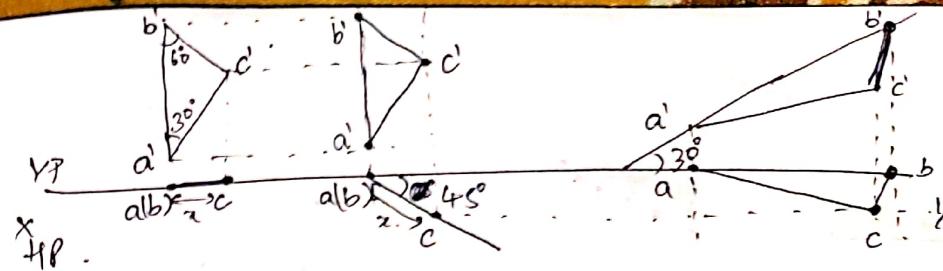
8) Hexagonal lamina of sides 25mm rests on one of its on HP. The lamina makes  $45^\circ$  to HP & the side on which it rests makes  $30^\circ$  to VP. Draw its Profs.



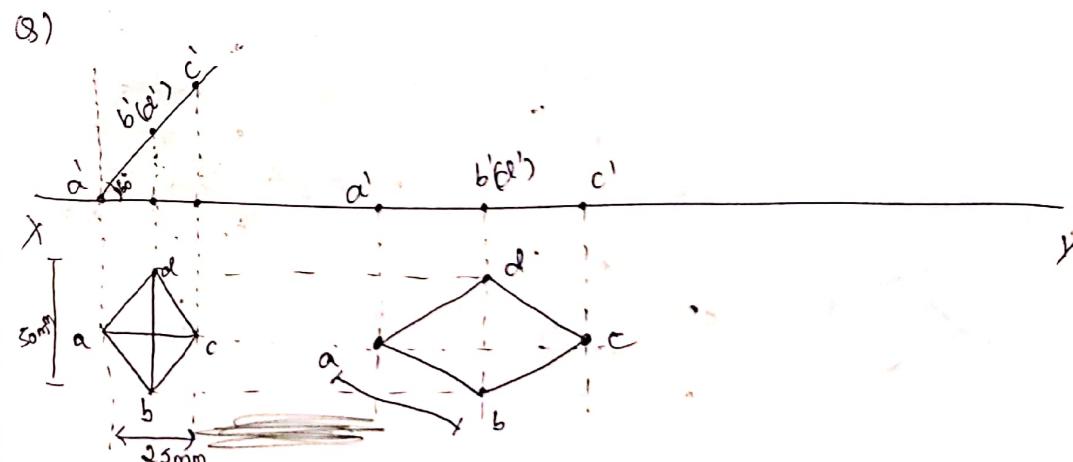
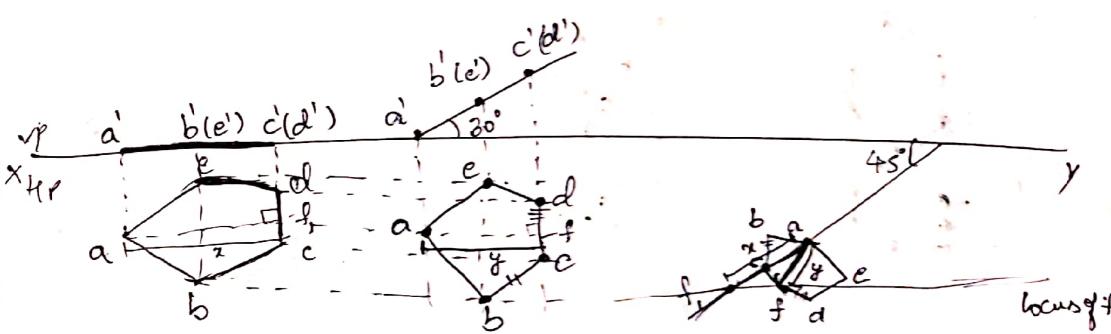
8) A lamina side 25mm rest on HP corners touching it such the side opp to the corner on which it rests is 15mm above HP & makes an angle  $30^\circ$  to VP. Draw the top, front views of this pro. Also determine the inclination of this lamina to the reference plane.

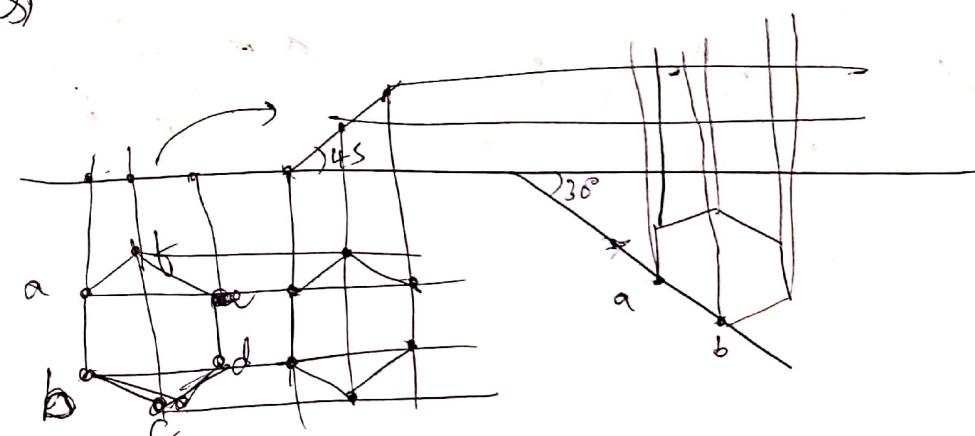
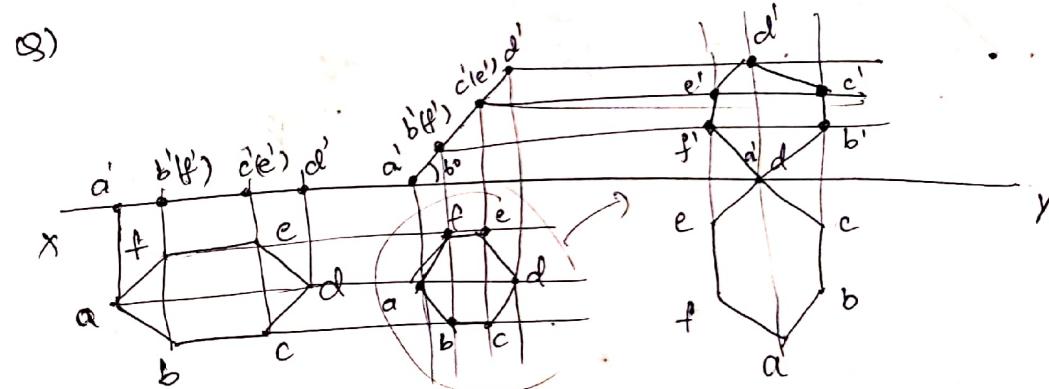
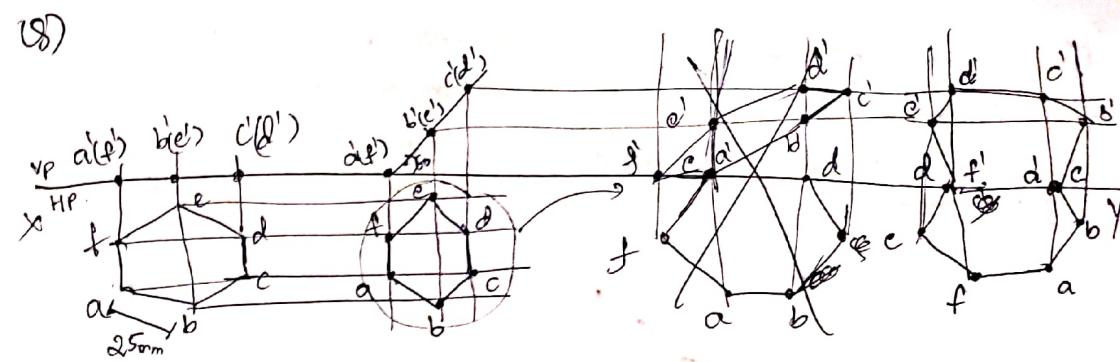
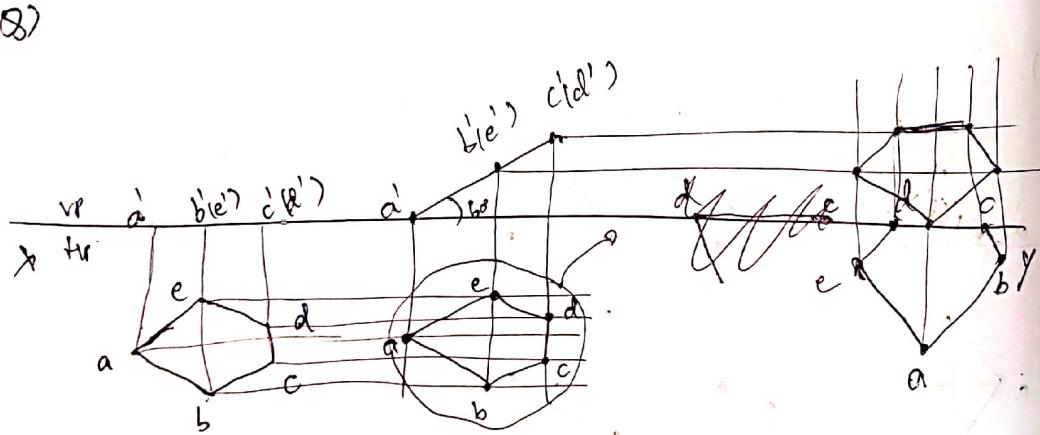
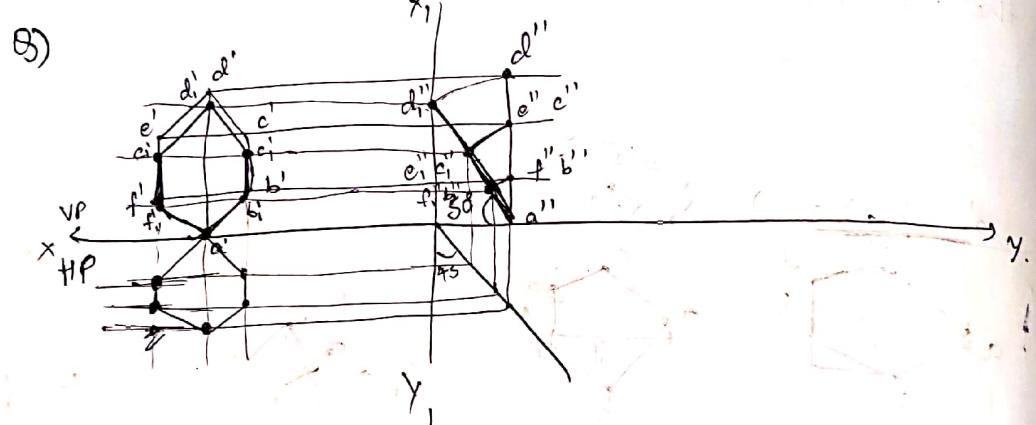
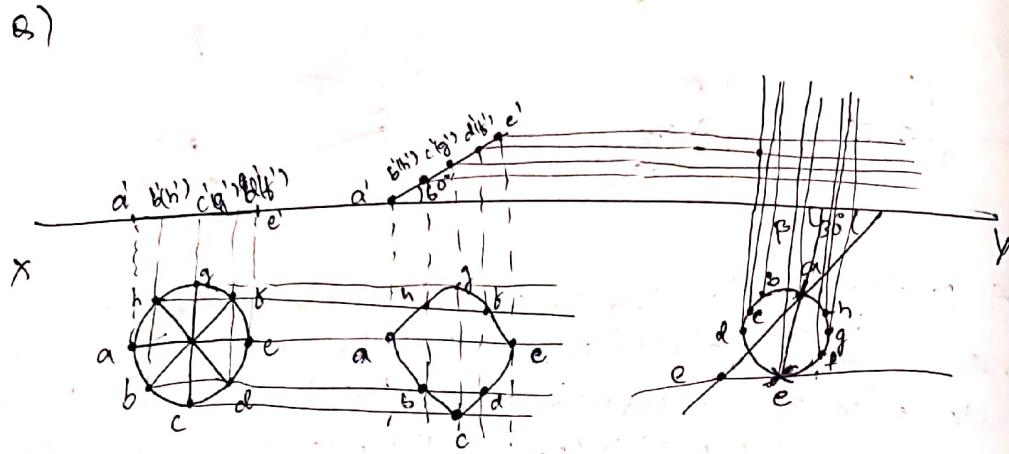


8) A ~~rectangular~~  $30^\circ - 60^\circ$  set square of longest side 100mm by 50mm is in VP &  $30^\circ$  inclined to HP while its surface is  $45^\circ$  inclined to VP. Draw its profs.

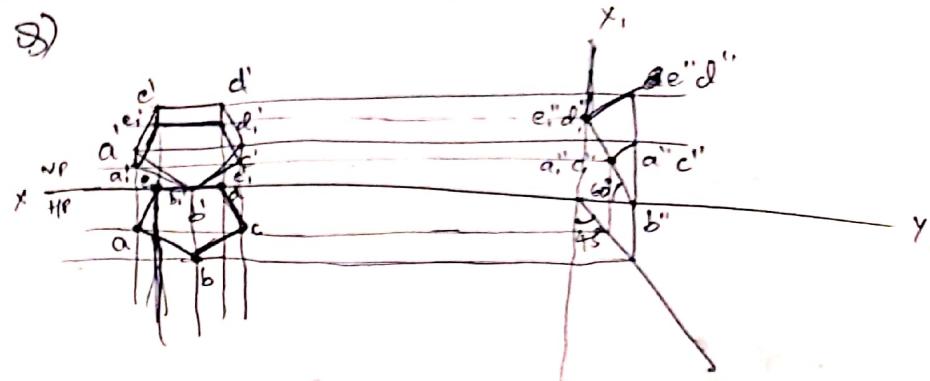
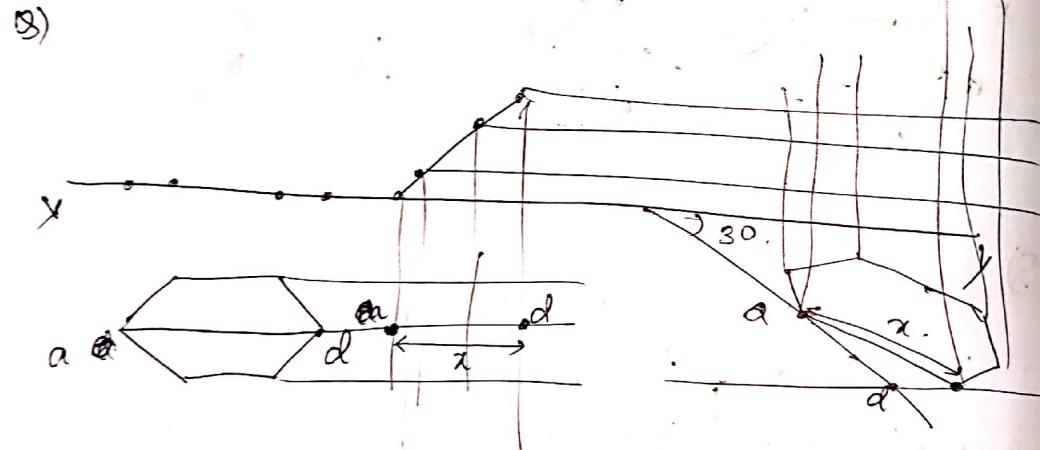
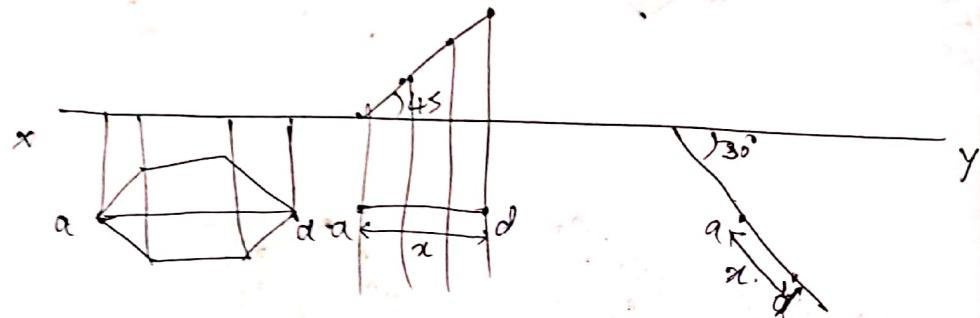


Q) A pentagonal lamina having edge 30mm is resting on corner and is placed such that the  $\perp$  bisector of the opposite edge of the corner on which it rests is inclined at  $30^\circ$  to HP and  $45^\circ$  to VP. Draw the top and front views of the lamina.



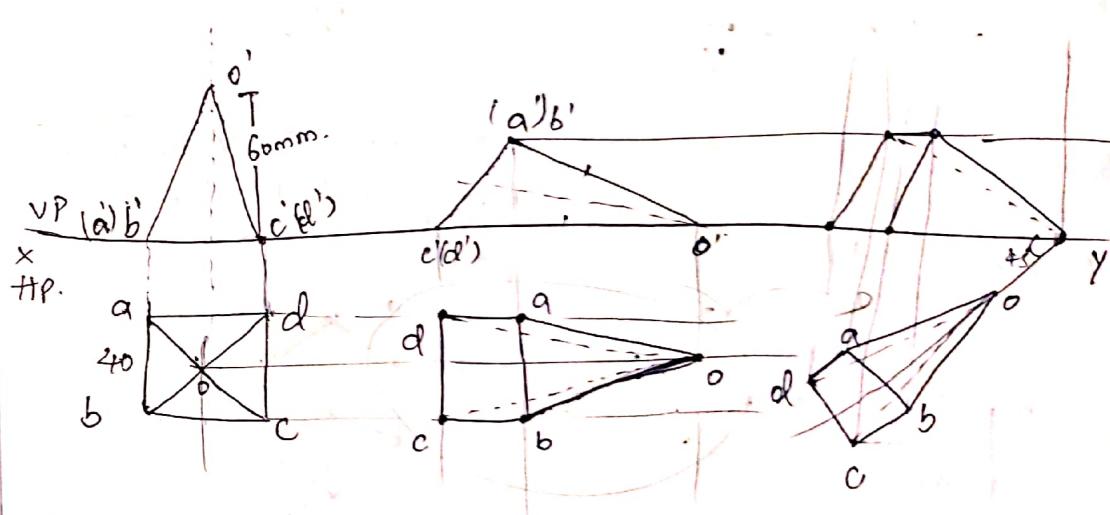


Q) A 5 mm rest on one of its corners on H.P.  $45^\circ$  to H.P. & the diagonal through the corner upon which it rests appears to be inclined to  $30^\circ$  to V.P.



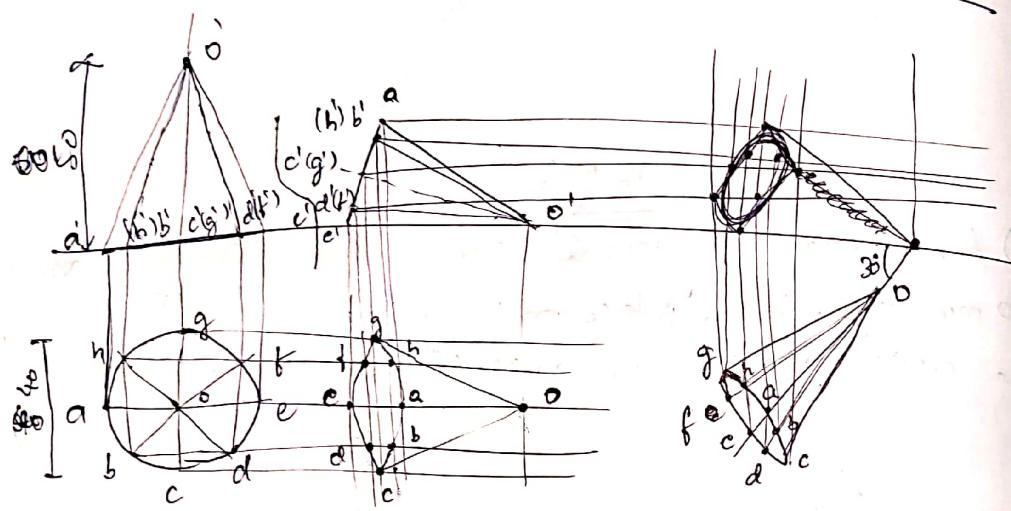
### Solids

Q) A square pyramidal, 40 mm base sides and axis 60 mm long, has a Δ face on the ground & the V.P containing the axis makes an angle of  $45^\circ$  with V.P. Draw its P.W.O.

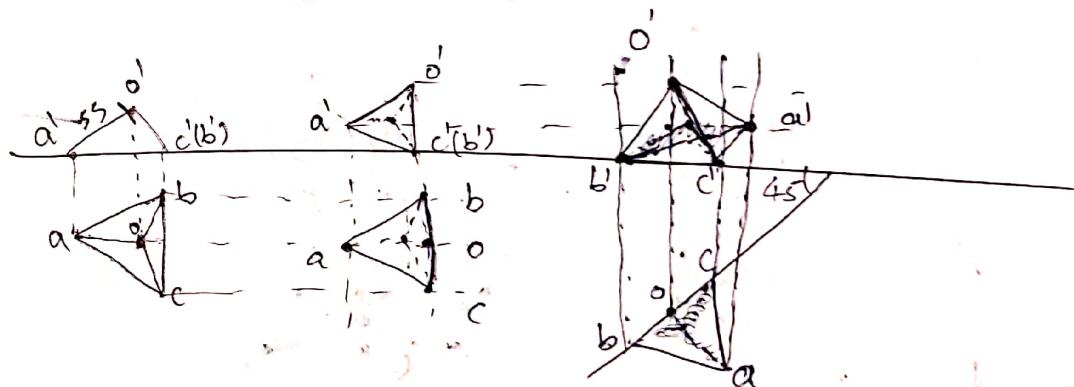
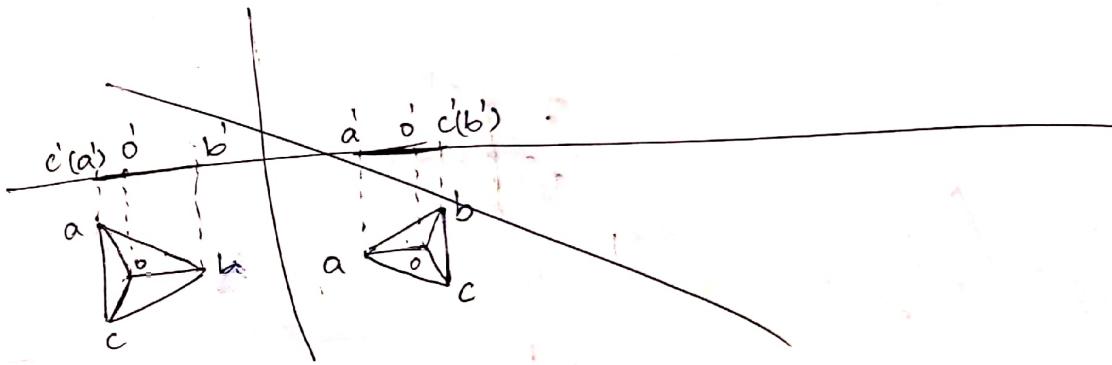
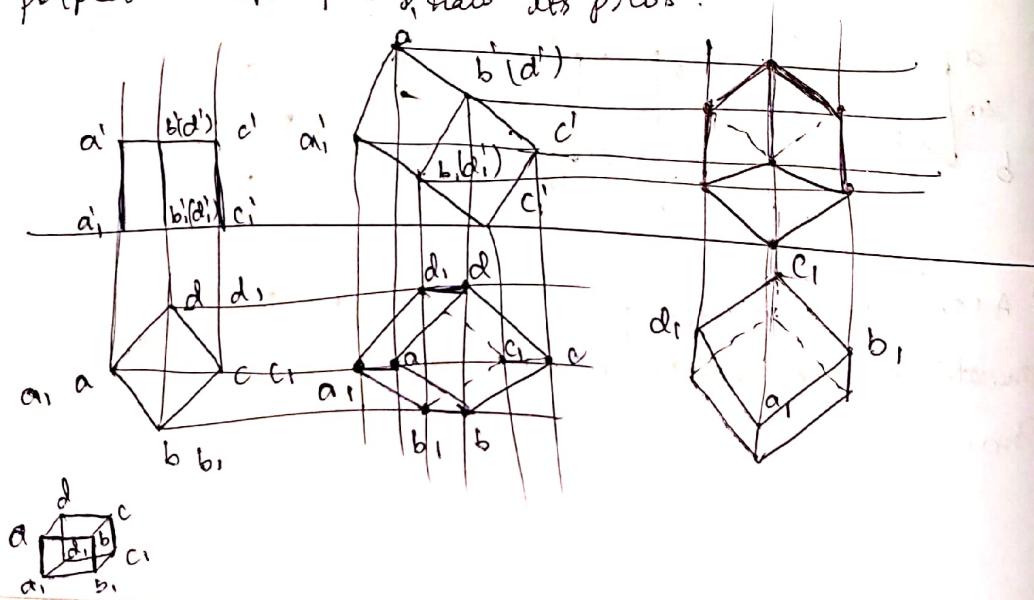


Q) A cone 40 mm dia & 50 mm axis is resting on one generator on H.P. which makes  $30^\circ$  inclination with V.P. Draw its P.W.O.

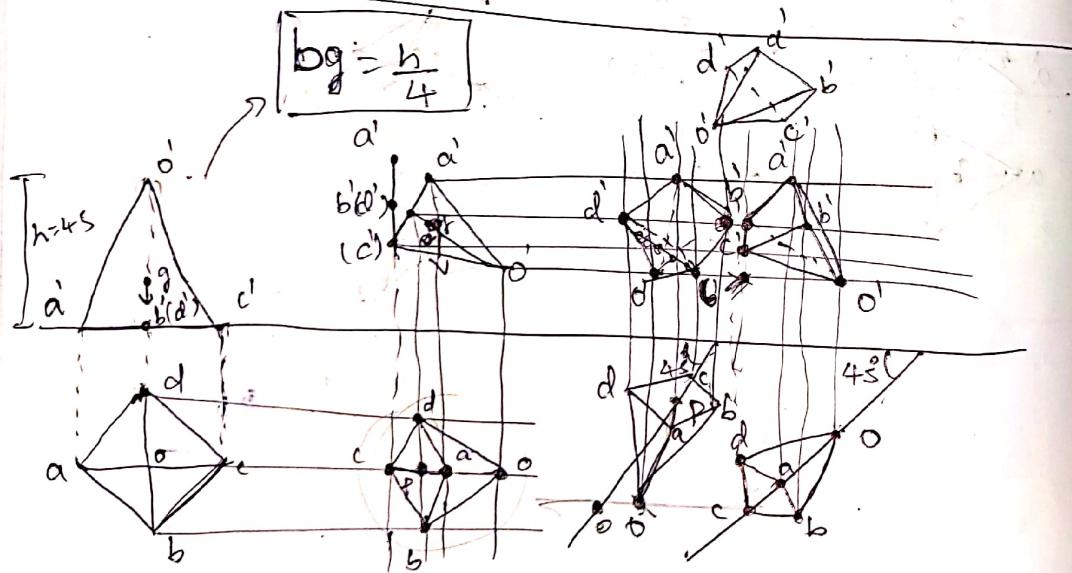
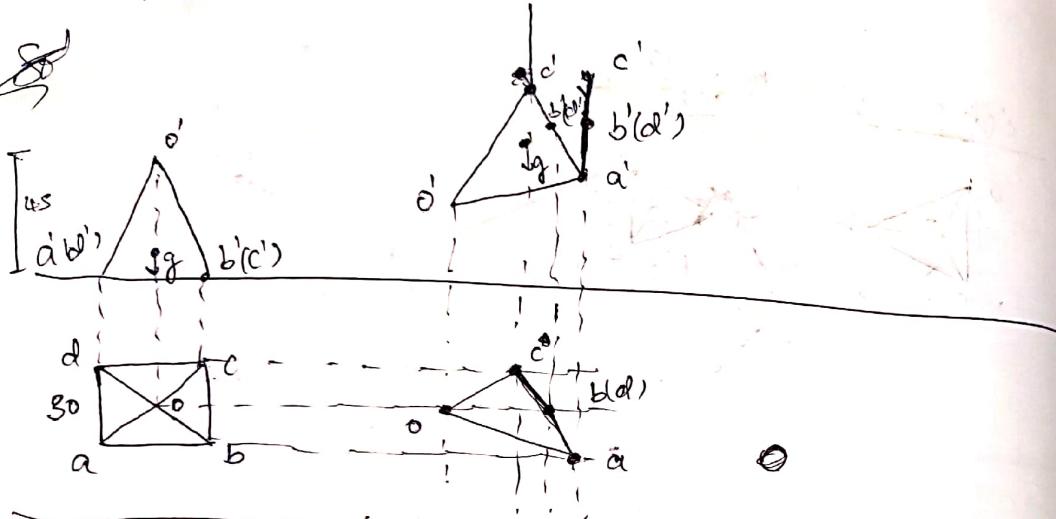
Q) A tetrahedron of 50 mm long edges is resting on one edge on HP while one triangular face containing this edge is vertical and  $45^\circ$  inclined to VP. Draw pros.



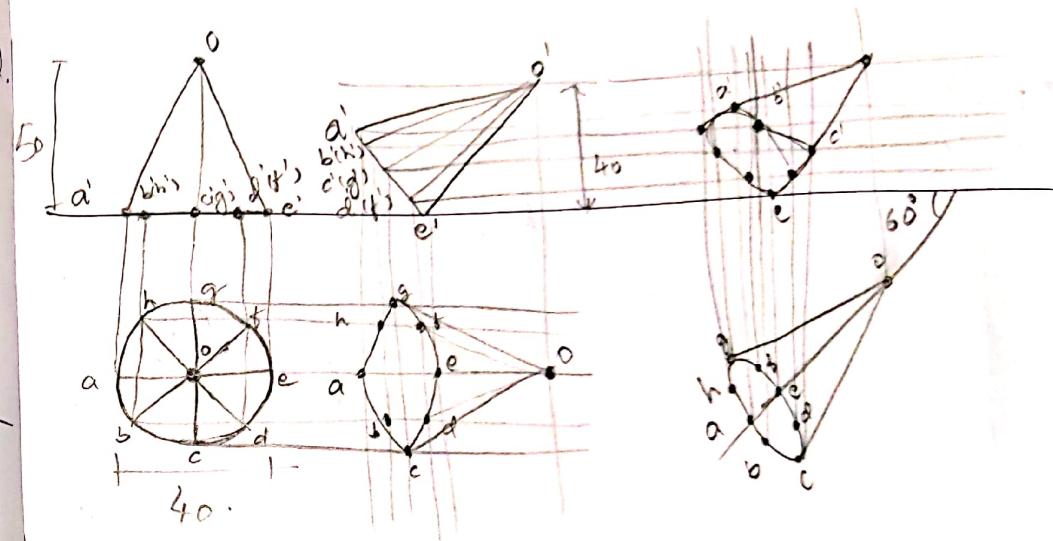
Q) A cube of 50 mm long edges is so placed on HP on one corner that a body diagonal is parallel to HP & perpendicular to VP. Draw its pros.



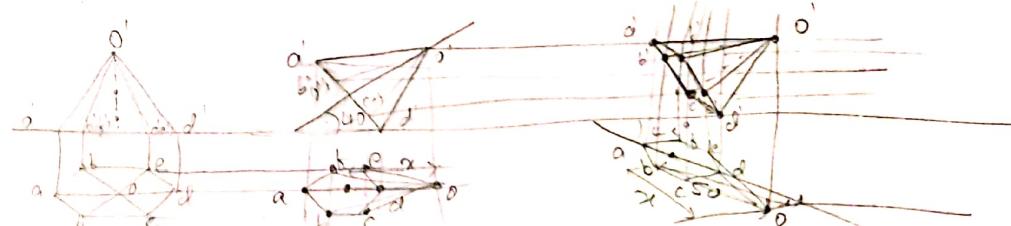
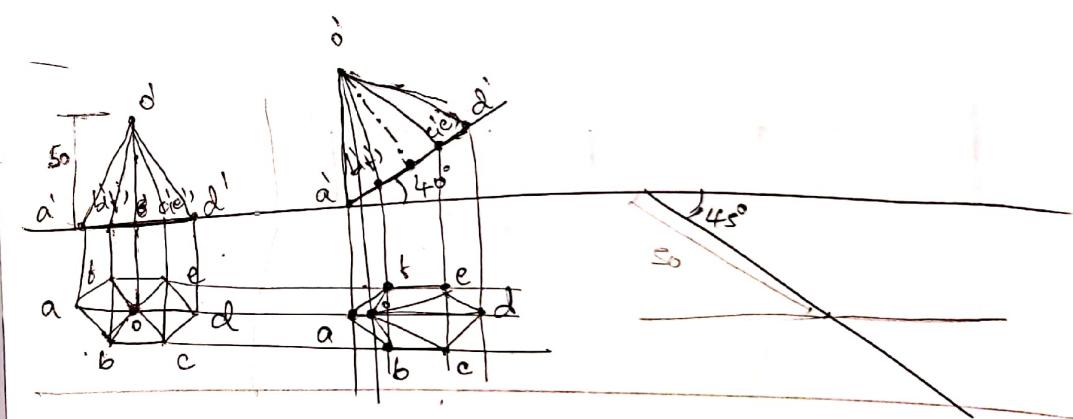
6) A square pyramid of base side 30 mm and height 45 is suspended by a thread tied to one of the corners of its base. It is then tilted such that the axis makes an angle 45° with respect to the VP, considering the apex of the solid to be nearer to the observer, draw the pros of the solids.



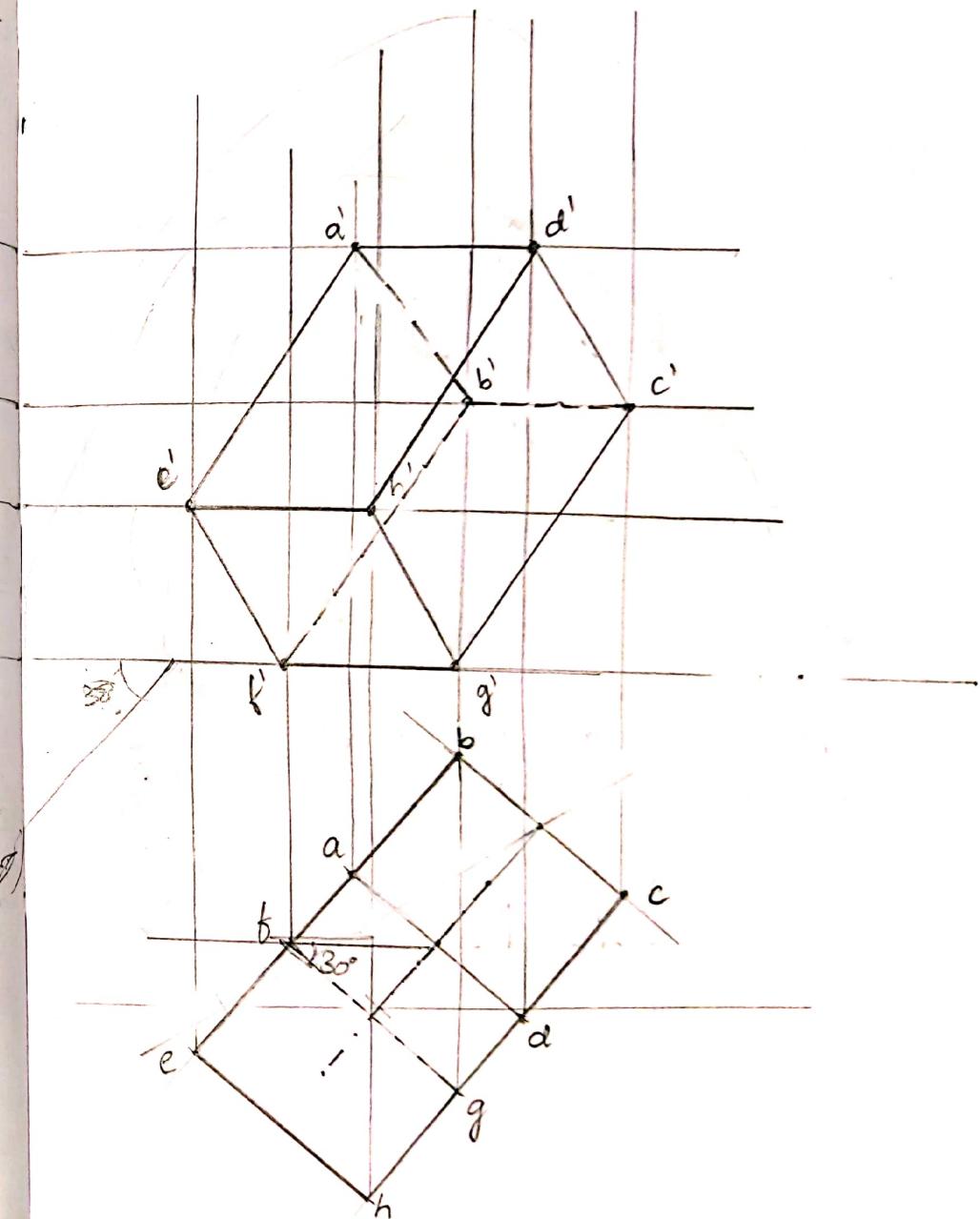
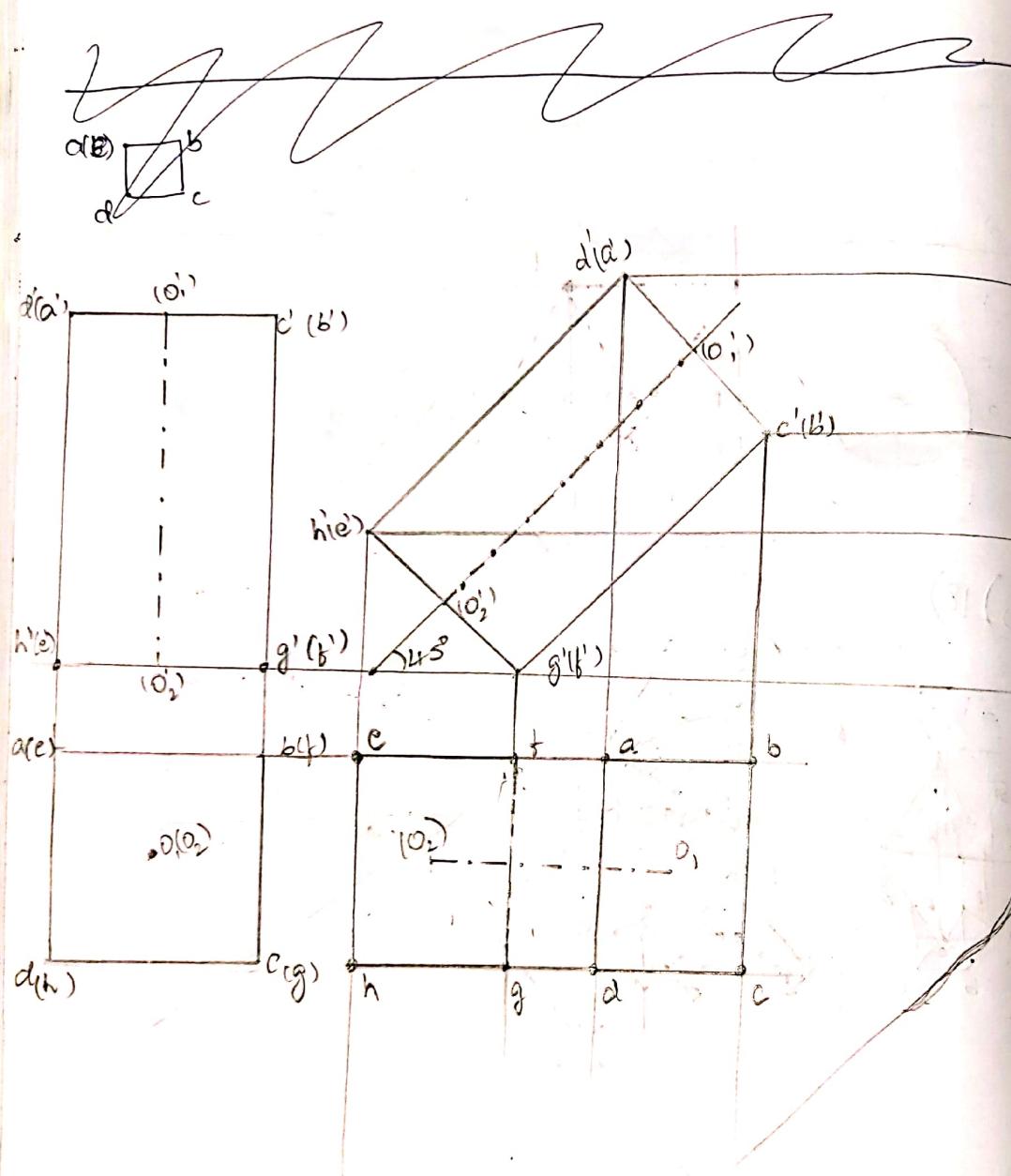
7) A cone of base diameter 40 mm and axis length 50 mm is resting on HP . . .



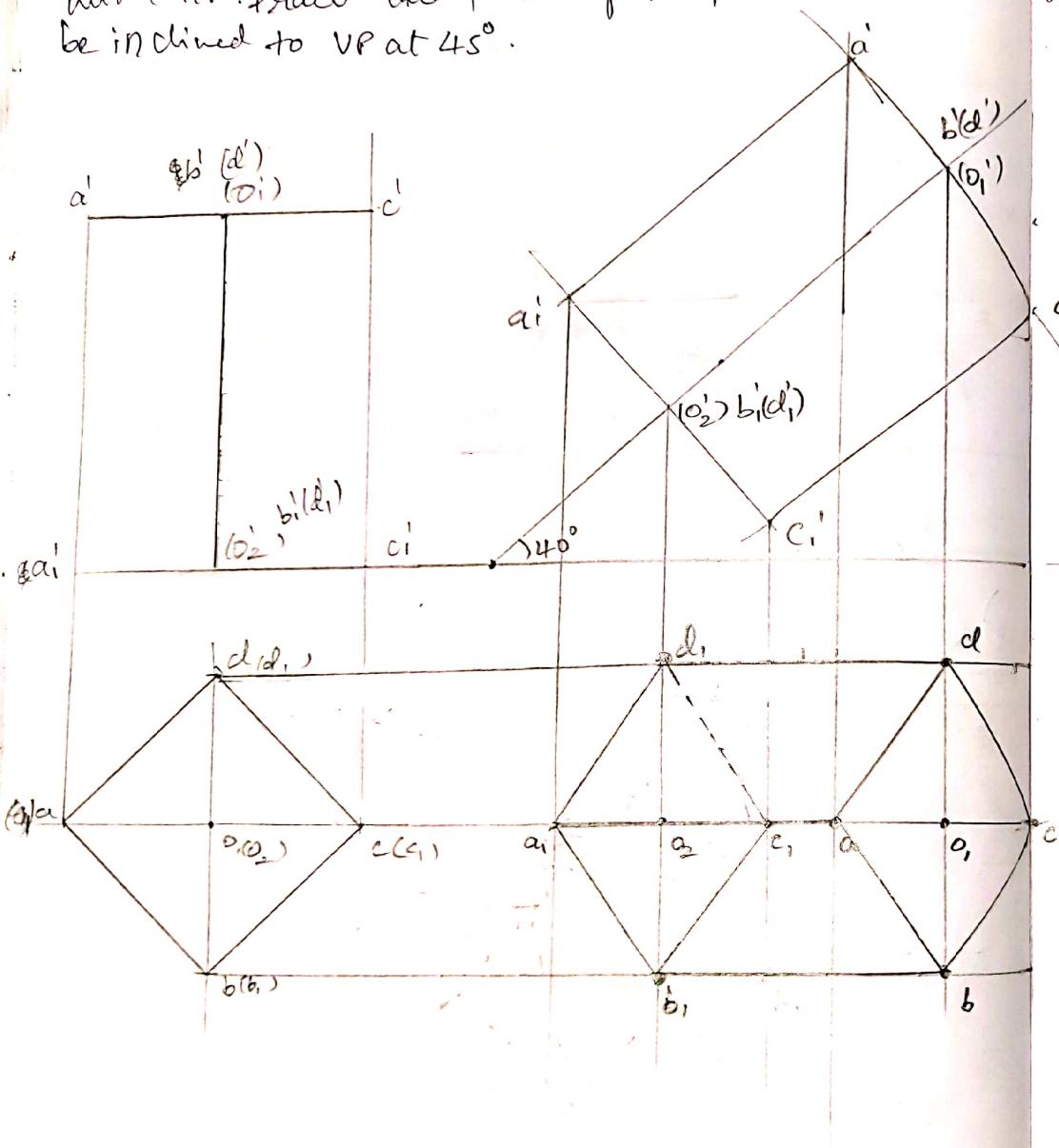
Q) 18)



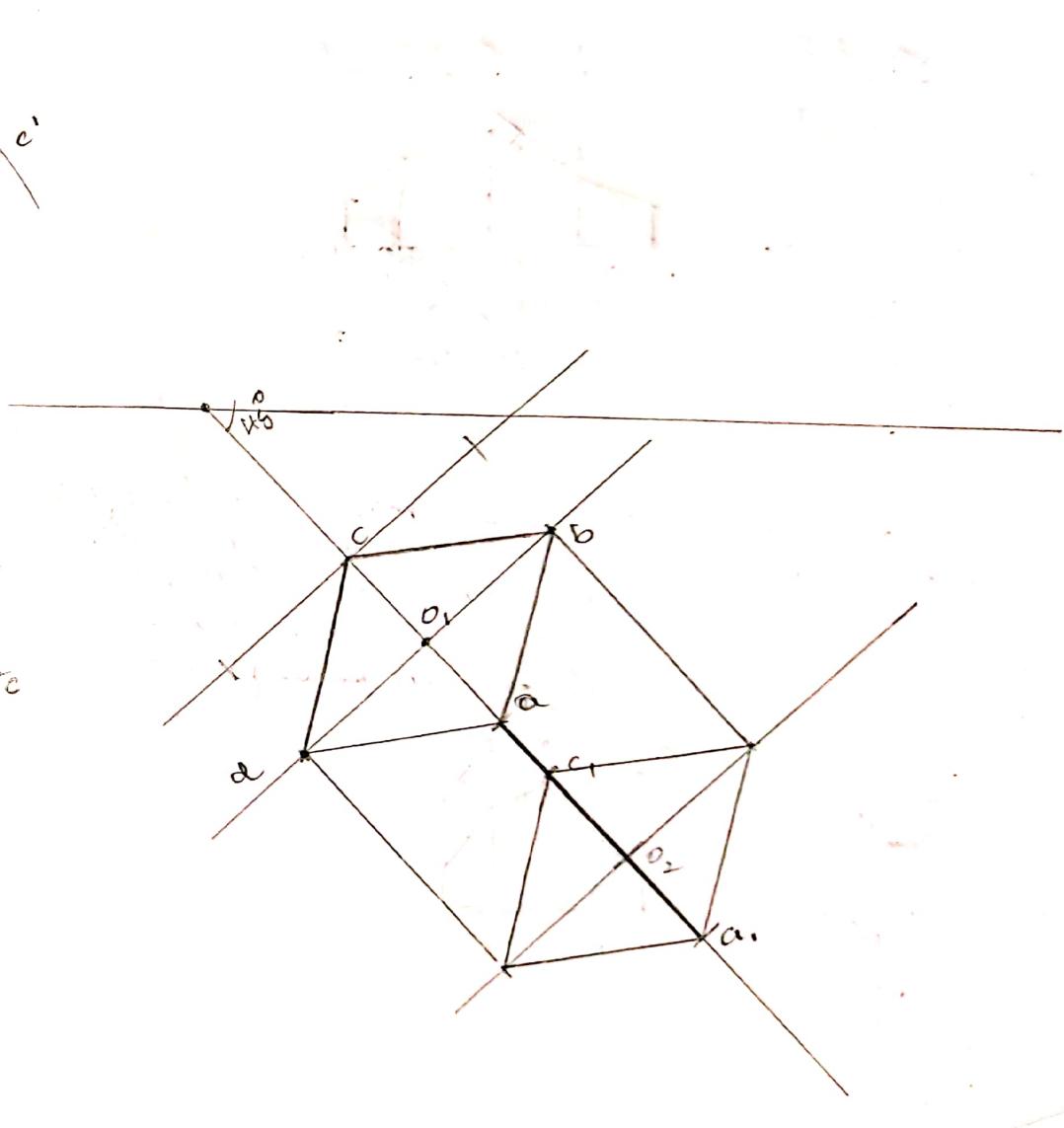
1)



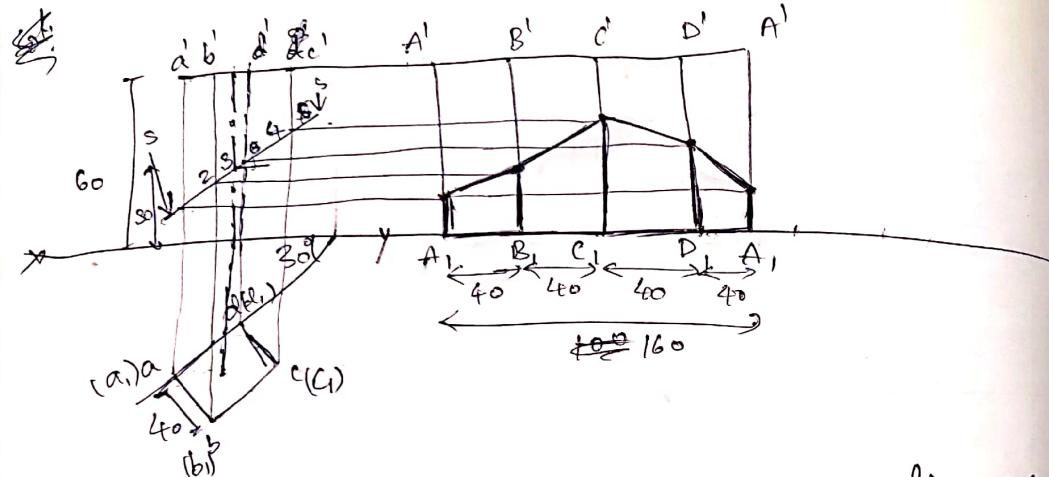
Q) A square prism 35 mm side of base and 60 mm base such that the two base edges containing the with HP. Draw the views of the prism when the be inclined to VP at  $45^\circ$ .



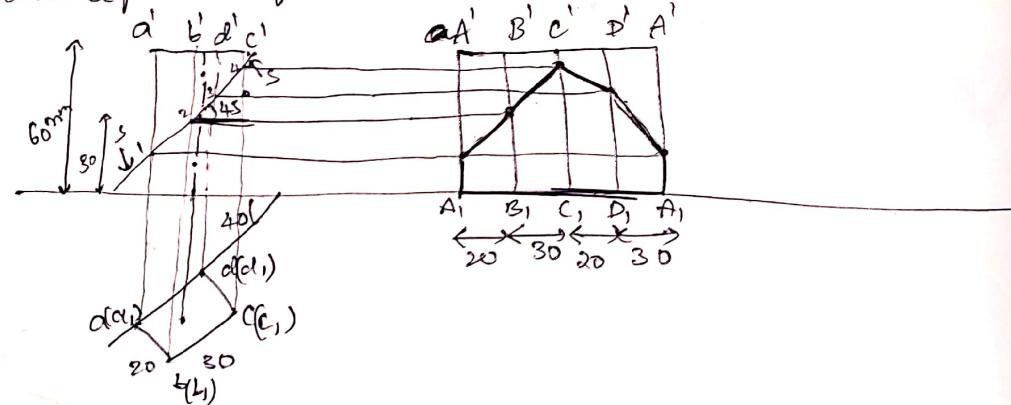
axis length rests on HP on one of its corners of the corner on which it rests make equal inclinations axis of the prism is inclined to VP at  $45^\circ$  appears to



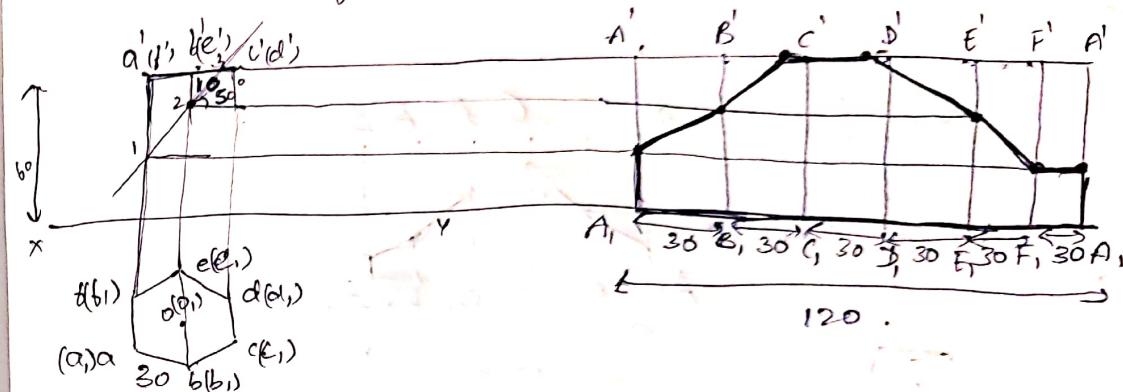
2) A square prism of base side 40mm & axis length 60mm is resting on HP on its base with a side of base inclined at  $30^\circ$  to VP. It is cut by a plane inclined at  $45^\circ$  to HP &  $\perp$  to VP & is bisecting the axis. Draw the development of the lateral surface of the remaining portion of the prism.



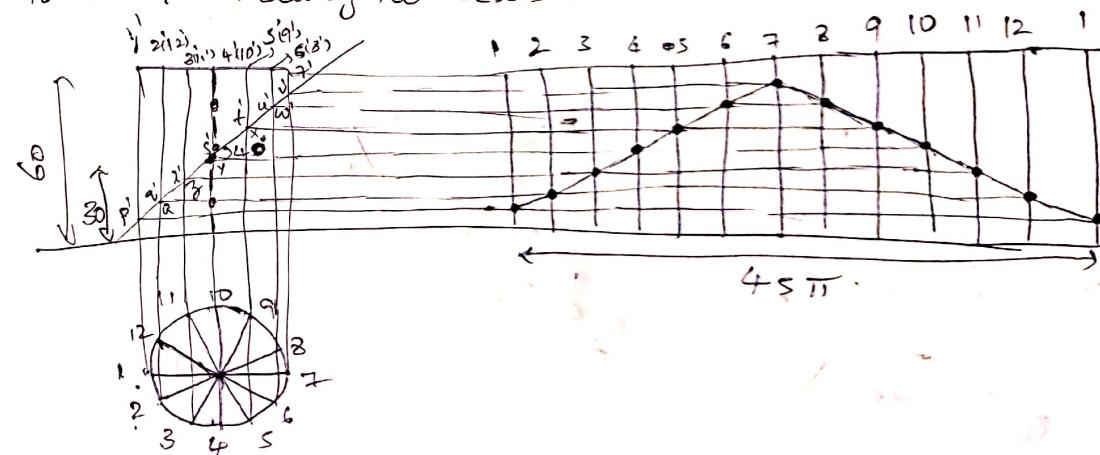
3) A rectangular prism of base  $30\text{ mm} \times 20\text{ mm}$  and height 60mm rests on HP on its base with the longer side inclined at  $40^\circ$  to VP. It is cut by a plane inclined at  $45^\circ$  to HP & perpendicular to VP & bisects the axis. Draw the development of the lateral surface of the prism.



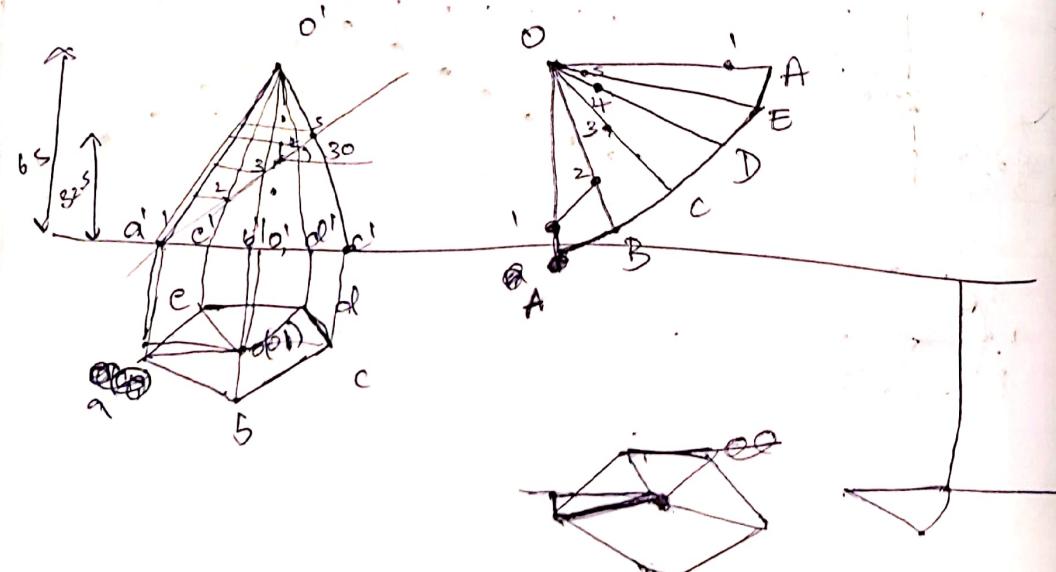
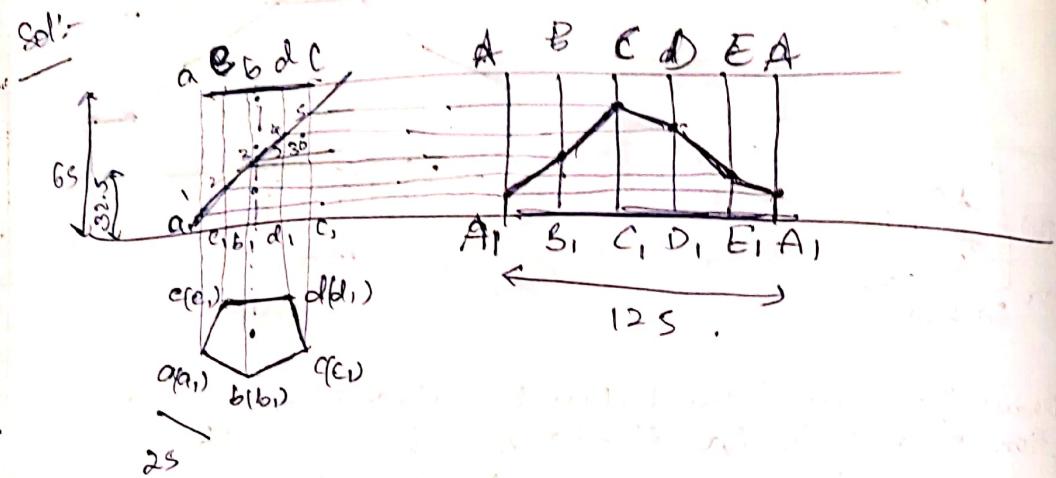
8) A hexagonal prism of base 30 & height 60 on ground with one of its vertical faces perpendicular to VP. It is cut by a plane inclined at  $50^\circ$  to HP &  $\perp$  to VP & meets the axis of the prism at a distance of 10mm from the top end. Draw the dev. of the lateral surfaces.



4) Draw the dev. of the lateral surfaces of the lower portion of a cylinder of dia 45 and height 60 when sectioned by a plane inclined at  $40^\circ$  to HP & perpendicular to VP & bisecting the axis.



57) A pentagonal pyramid of base 2s and height 6s stands with its base on H.P. such that one of its base edges is parallel to V.P. It is cut by a section plane  $\perp$  to V.P and inclined at  $30^\circ$  to H.P, bisecting the axis. Draw the elevations of the lateral surfaces of the solid.



15) A pentagonal pyramid . . . B=2s; h = 6s.  
For away from V.P.

