



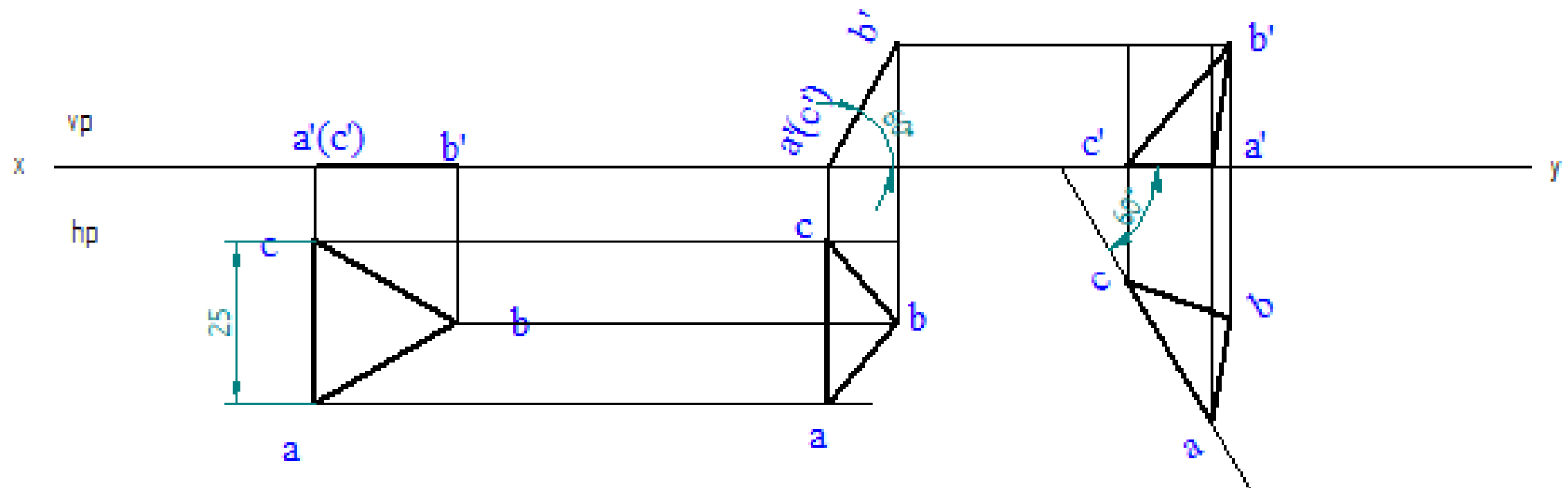
Department of Mechanical Engineering

Course: Computer Aided Engineering Drawing

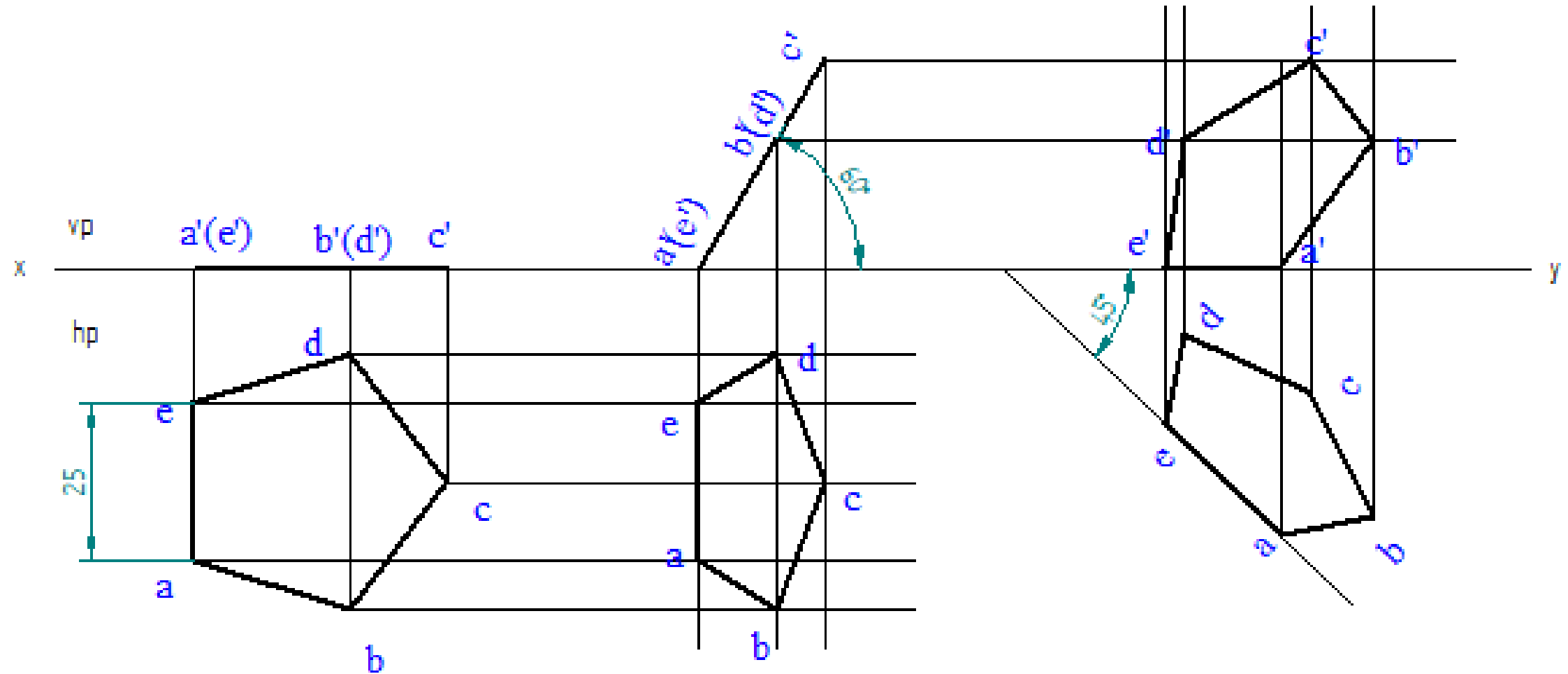
Module 1: Projection of Planes

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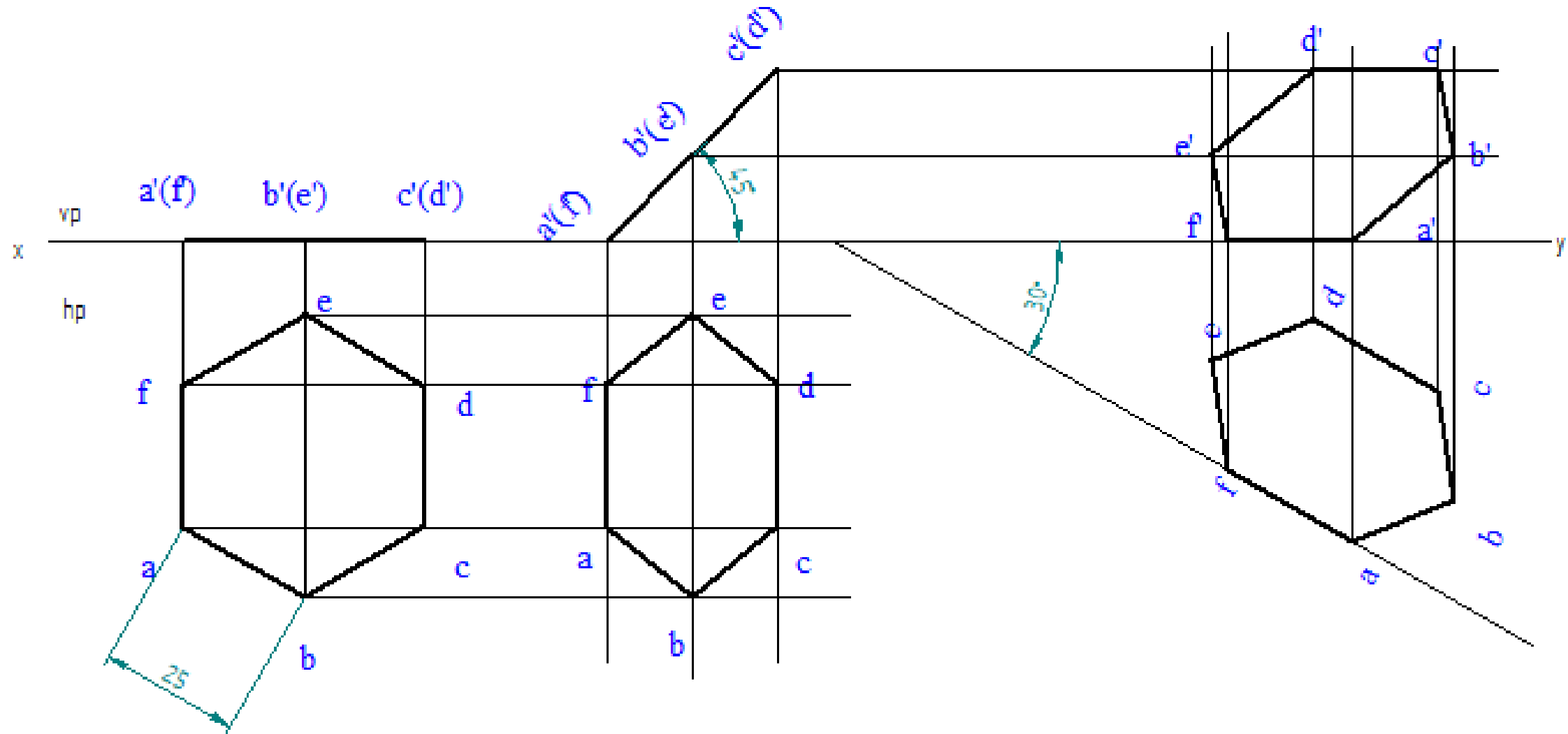
An equilateral triangle of 25 mm side lies with one of its edges on horizontal plane, such that the surface of lamina is inclined at 60° . The edge on which it rests is inclined to vertical plane at 60° . Draw the projections.



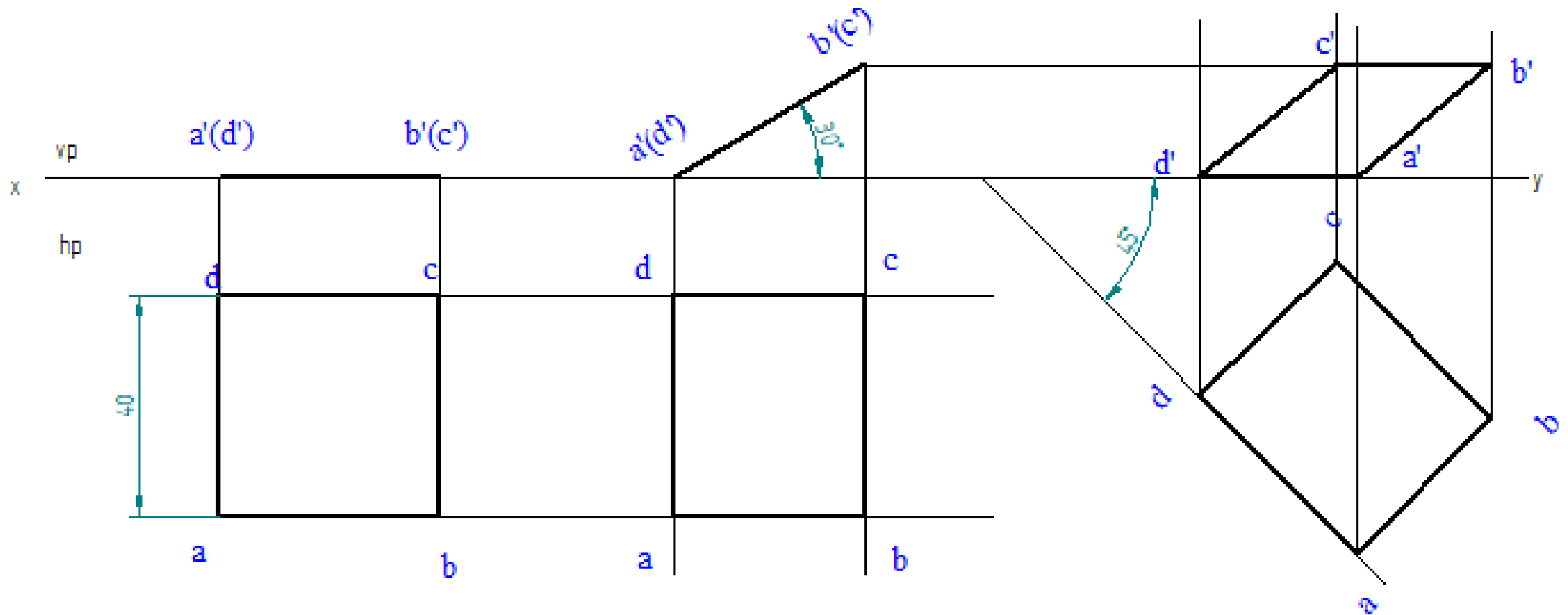
The pentagonal lamina of edges of 25 mm side is resting on horizontal plane, with one of its sides such that the surface makes at an angle of 60° . The edge on which it rests is inclined to vertical plane at 45° . Draw the projections.



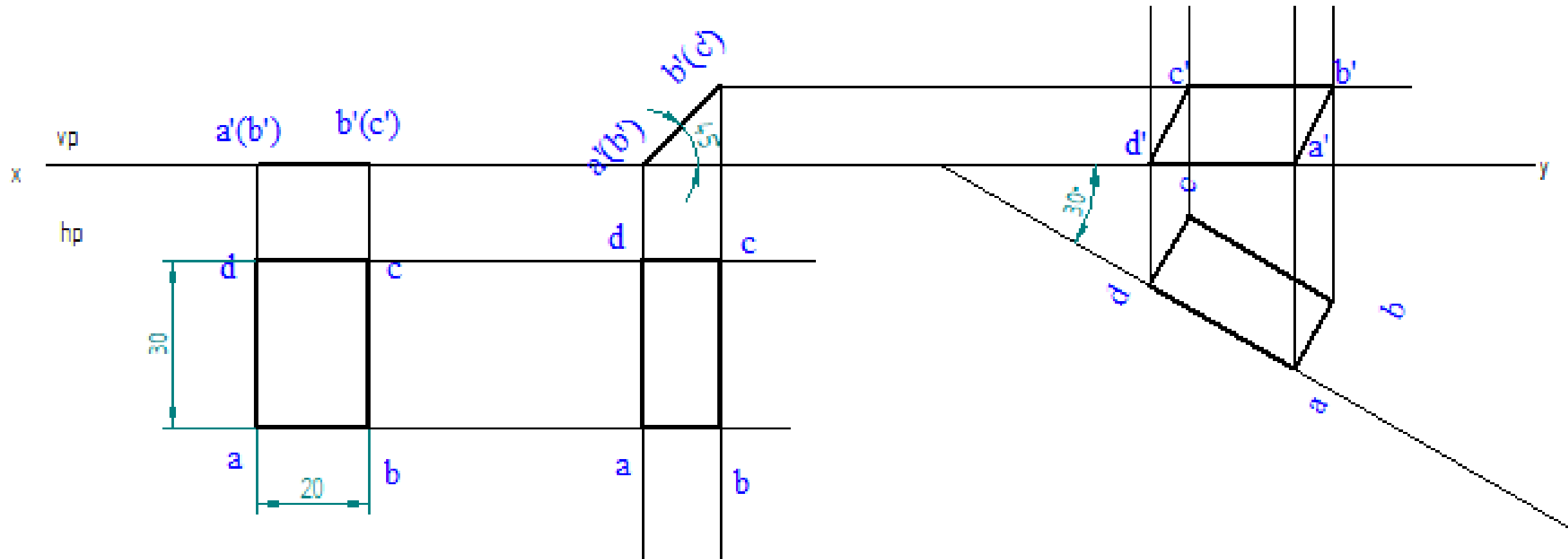
A hexagonal lamina of 25 mm side resting on one of its sides on horizontal plane, lamina makes 45° to horizontal plane and the side on which it rests makes 30° to vertical plane. Draw the projections.



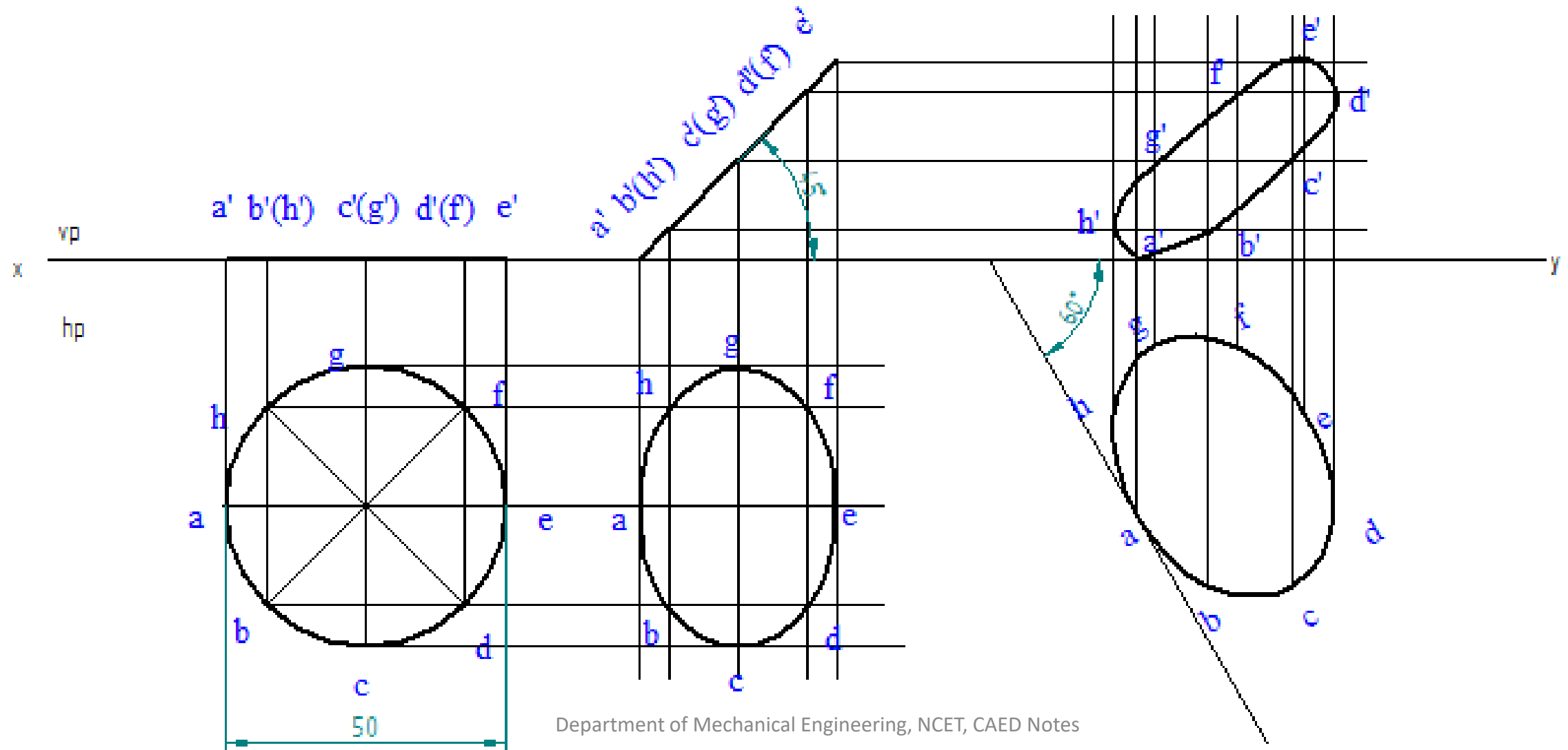
A square lamina of 40 mm side rests on one of its sides on horizontal plane. The lamina makes 30° to horizontal plane and the side on which it rests makes 45° to vertical plane. Draw the projections.



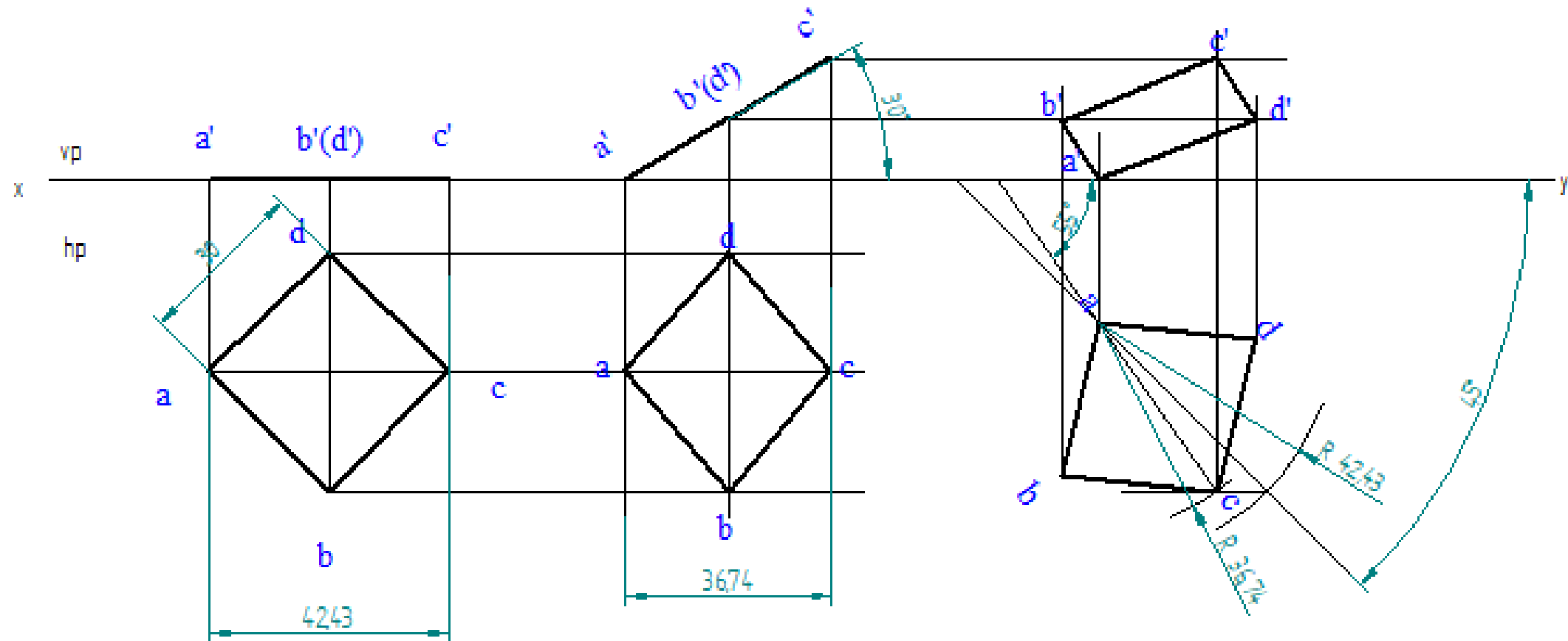
A rectangular lamina of sides 20 mm x 30 mm rests on horizontal plane on one of its longer edges. The lamina is tilted about the edge on which it rests till its plane surface is inclined to horizontal plane at 45° . The edge on which it rests is inclined at 30° to vertical plane. Draw the projections.



Draw the projections of a circular lamina of negligible thickness of 50 mm diameter resting on horizontal plane on a point A on the circumference, its plane is inclined at 45° to horizontal plane and the top view of the diameter passing through the resting point makes 60° with the vertical plane.



A square plane of 30 mm sides resting on horizontal plane such that one of the diagonal is inclined at 30° to horizontal plane and 45° to vertical plane on its corner, draw the projections.



TRUE LENGTH
diagonal is in its
true length in
initial position
or first position

FORE SHORTEND
diagonal is fore
shorted in new
position or second
position

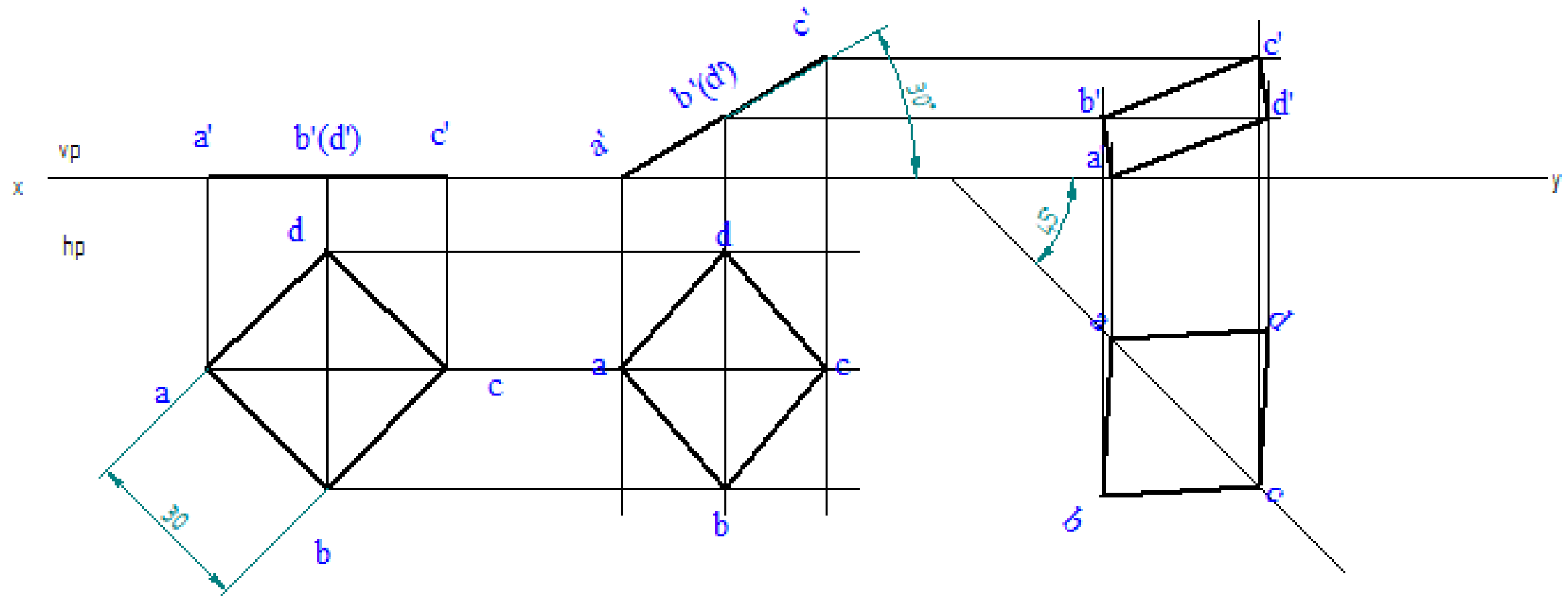
Beta angle = 55° degrees

In third position when the same element
inclined again then there exists a beta angle.

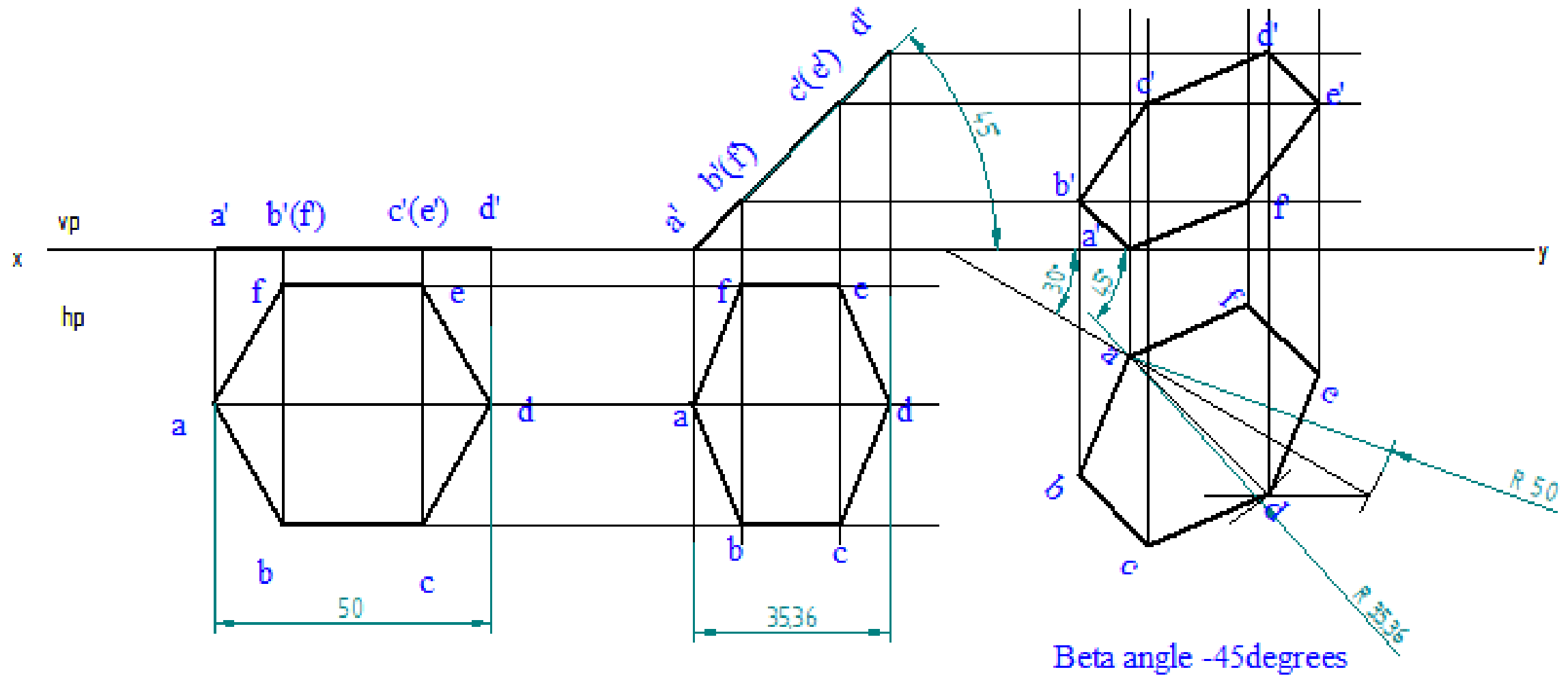
A square plane A, B, C, D of 30 mm sides resting on its corner such that the diagonal AC appears to be 45° to vertical plane and 30° to horizontal plane.

Solution:

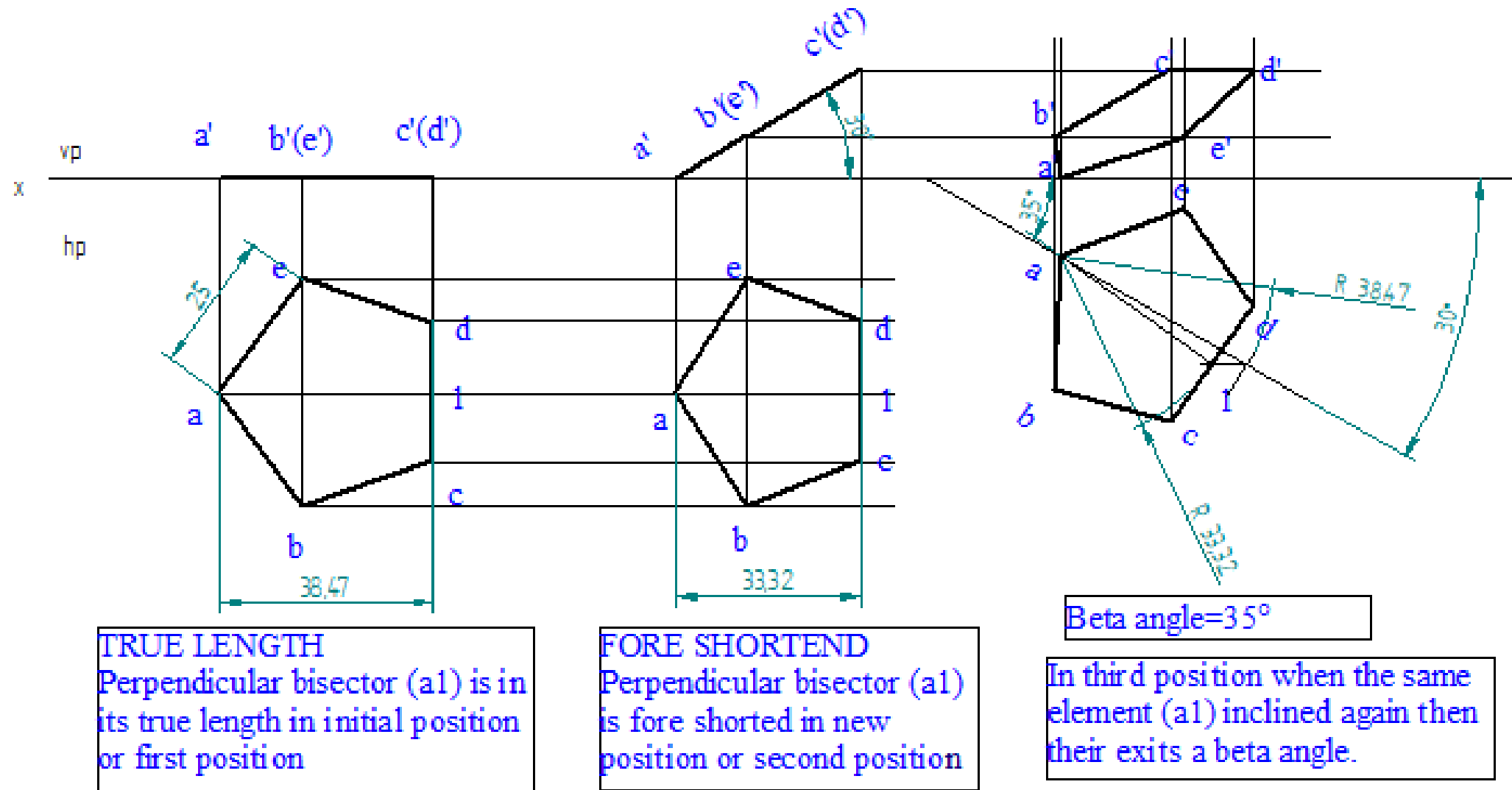
This is not a beta angle problem this seems similar to M1-prob7 but it is a direct problem as it is mentioned **APPEARS TO BE**, this means we have to consider the second position as it is.



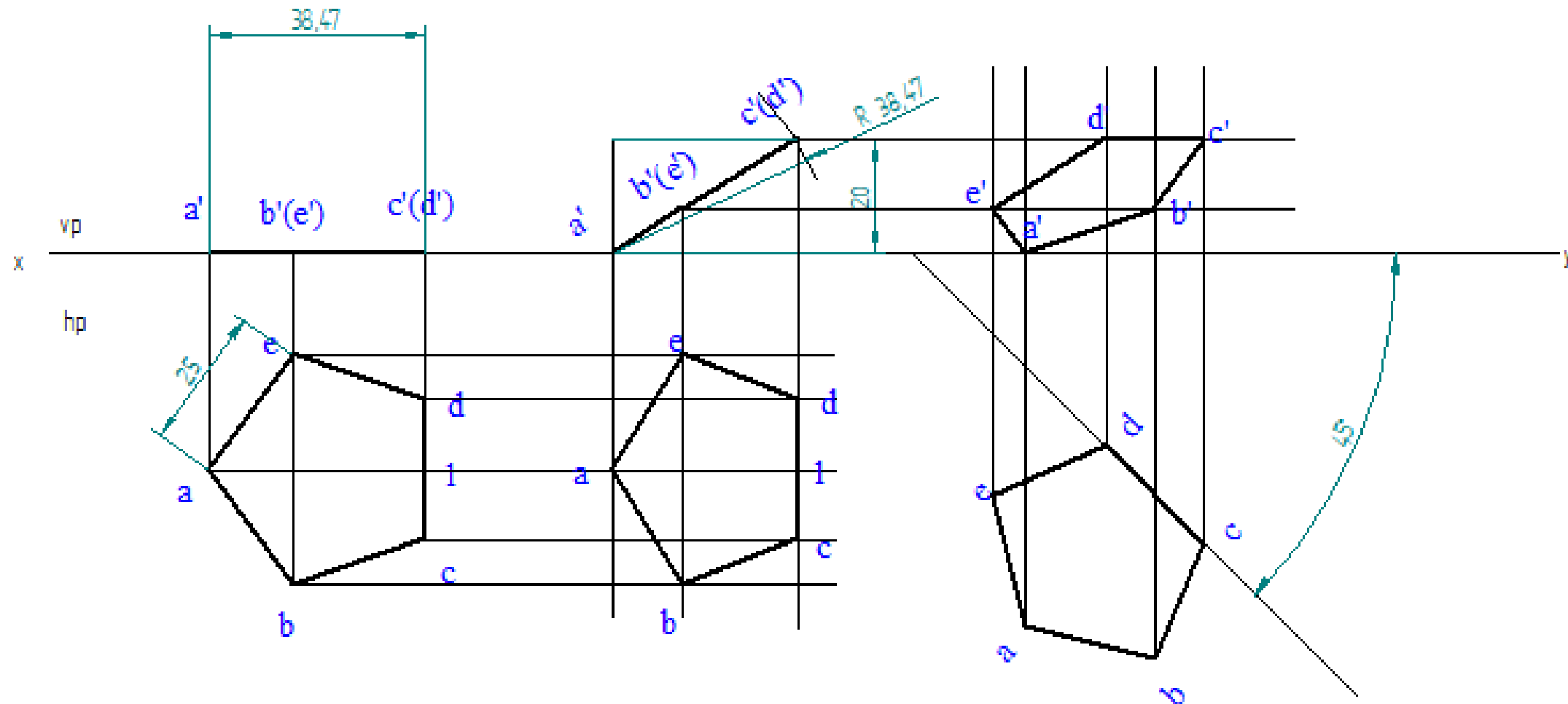
A hexagonal lamina of 25 mm side resting on its corner on horizontal plane, the lamina makes 45° to horizontal plane and the diagonal passing through the corner is inclined at 30° to vertical plane, draw the projections.



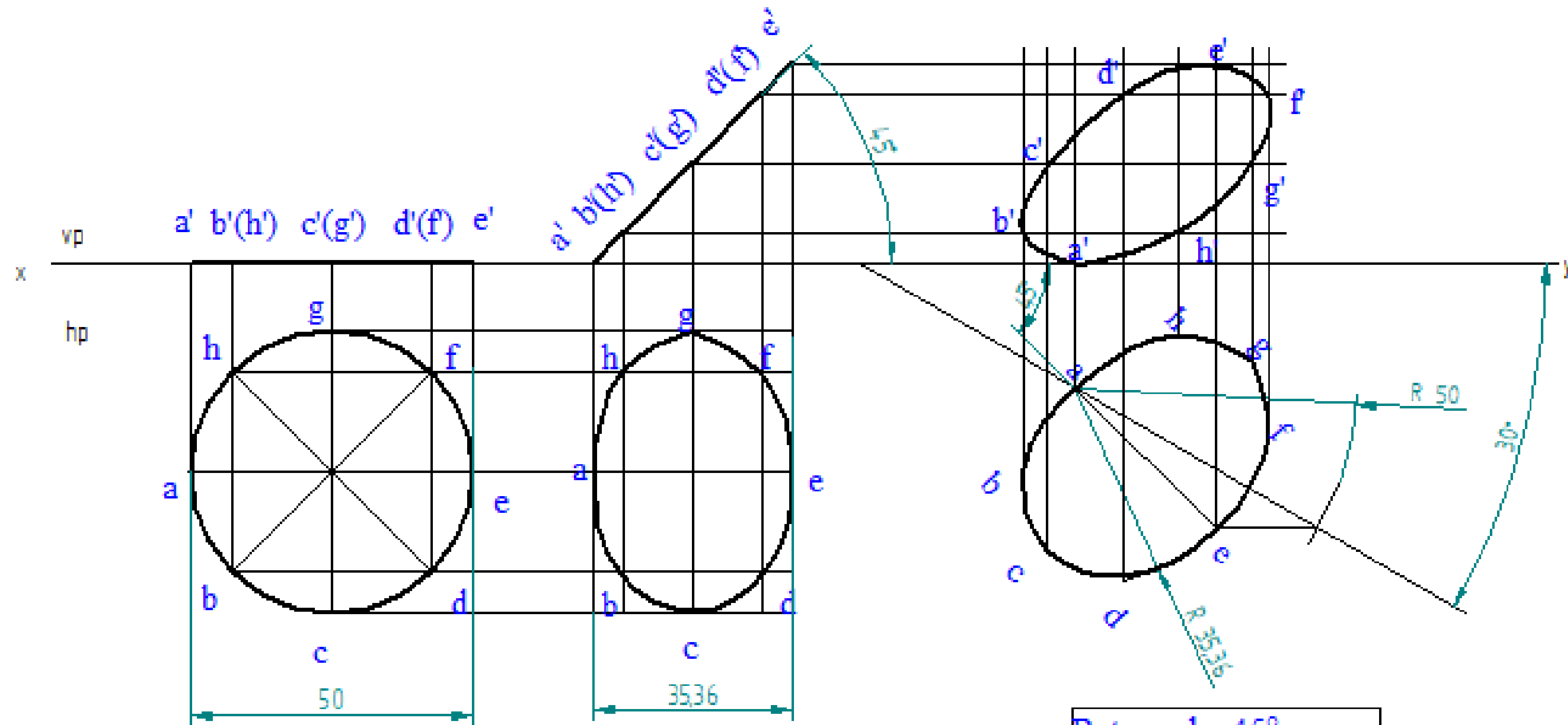
A pentagonal lamina having edges 25 mm is placed on one of its corner such that the perpendicular bisector passing through the corner on which the lamina rests it is inclined at 30° to horizontal plane and 45° to vertical plane.



A pentagonal lamina of edges 25 mm is resting on horizontal plane with one of its corner such that the edge opposite to this corner is 20 mm above the horizontal plane and makes an angle of 45° to vertical plane. Draw the top and front views of the plane lamina in this position. Determine the inclination angle of horizontal plane.



A circular lamina of 50 mm diameter rests on horizontal plane such that one of its diameter is inclined at 30° to vertical plane and 45° to horizontal plane. Draw the top and front views in this position.



TRUE LENGTH

Diameter (ae) is in its true length in initial position or first position

FORE SHORTEND

Diameter (ae) is fore shorted in new position or second position

Beta angle = 45°

In third position when the same diameter (ae) inclined again so exits a beta angle.