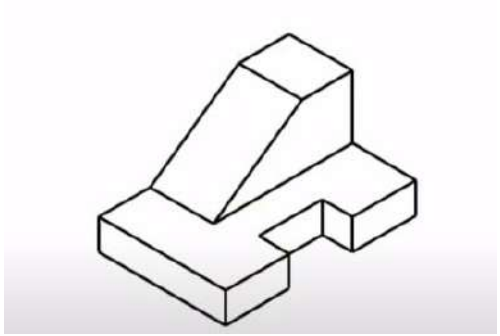
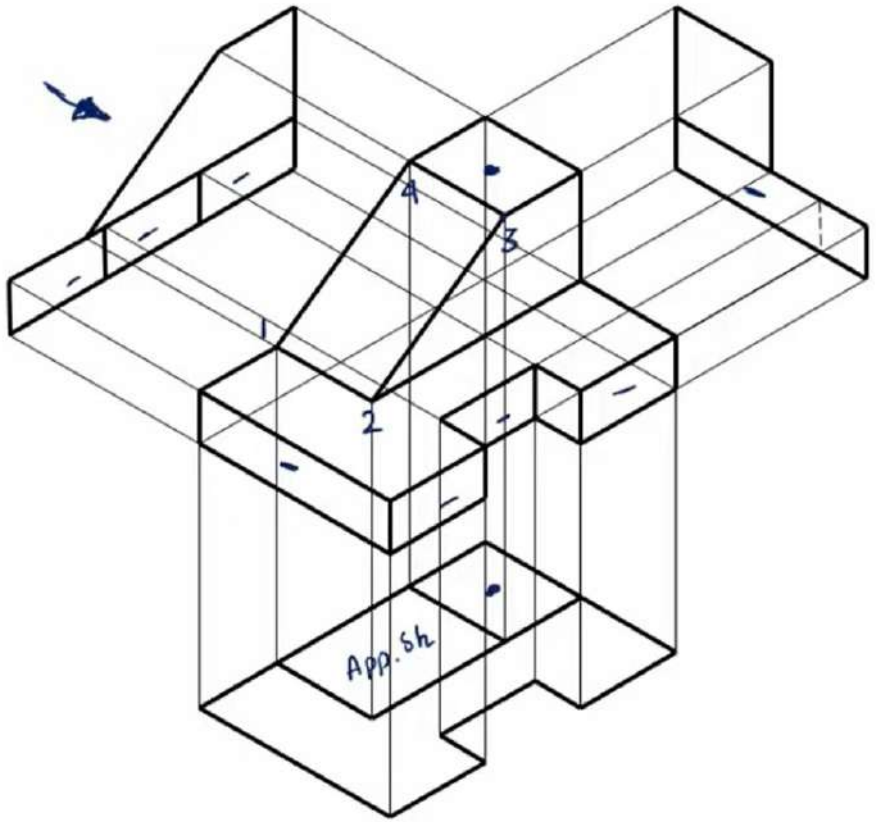
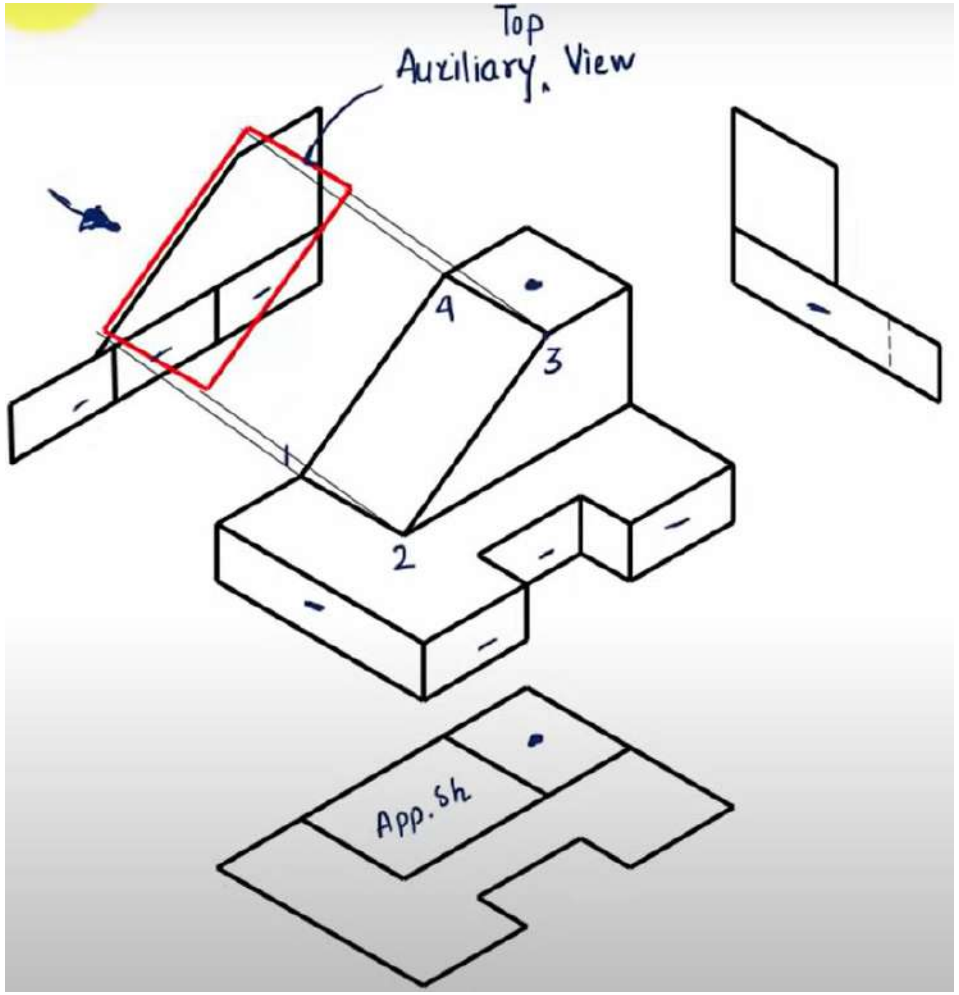
Auxiliary Planes and Views



Object



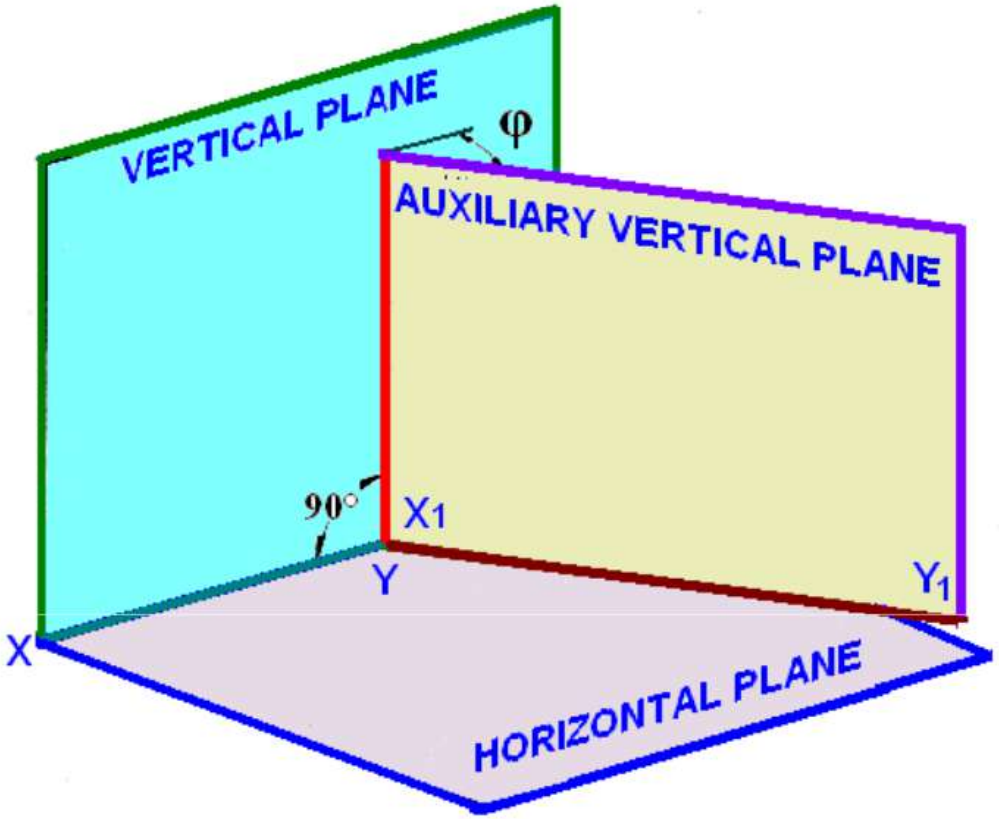
Side view and top view



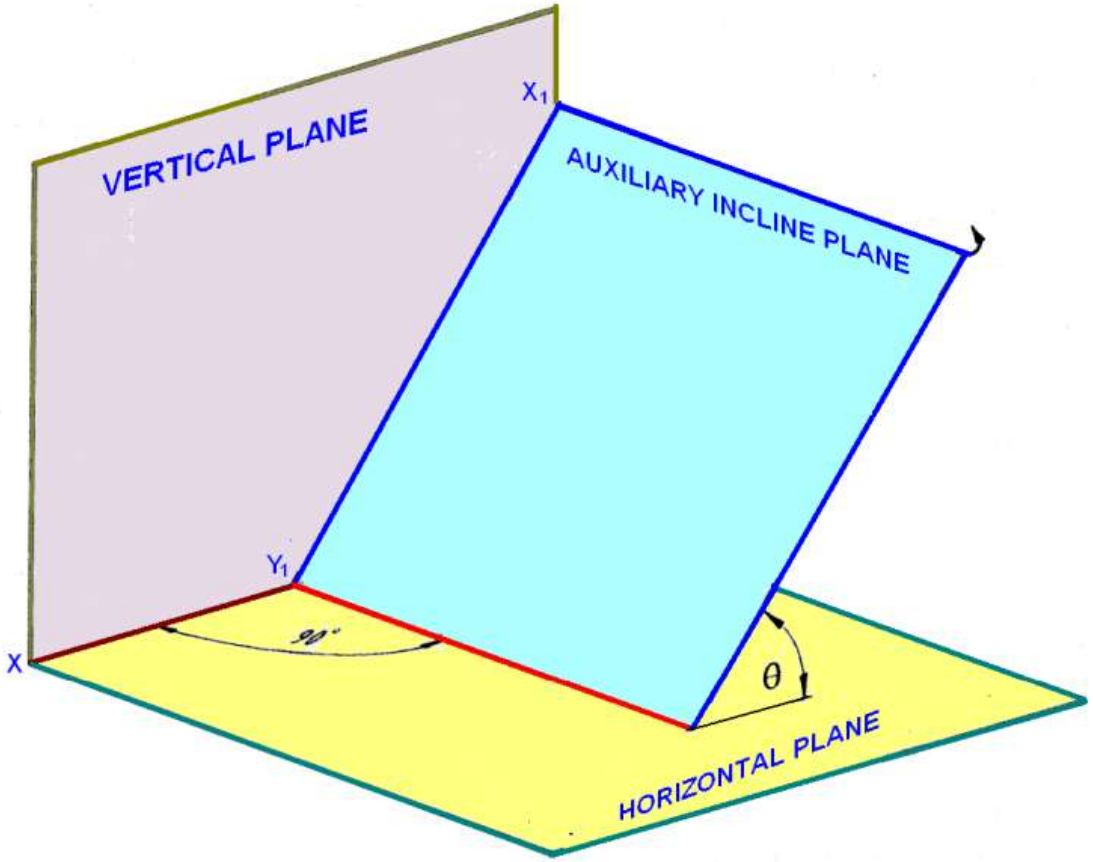
Auxiliary Planes

- Three principal orthographic views of an object unable to show the different edges and faces of an object in their true sizes. (sometimes)
- To show such edges and faces in their true sizes, it is necessary to set up additional planes of projection other than the three principal planes of projection which will show them in true sizes.
- The additional planes are set up so as to be parallel to the edges and faces which should be shown in true sizes.
- These additional planes of projection which are set up to obtain the true sizes are called Auxiliary Planes.
- Usually, the auxiliary planes are parallel to the edge or face which is to be shown in true size and perpendicular to any one of the three principal planes of projection.

Types of Auxiliary Planes

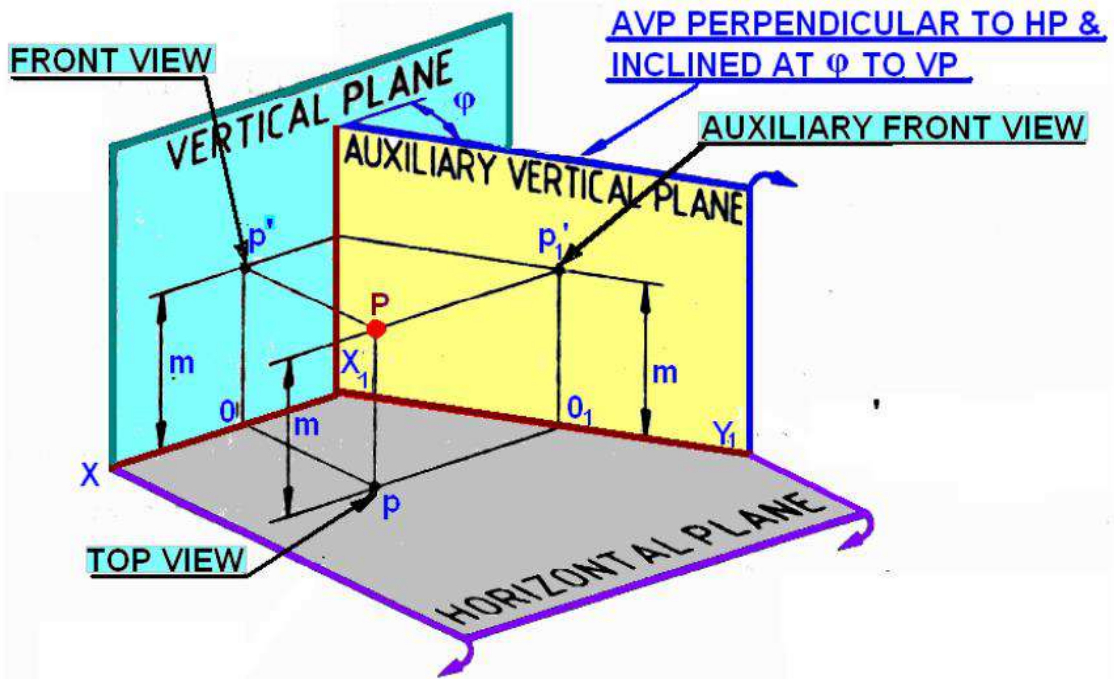


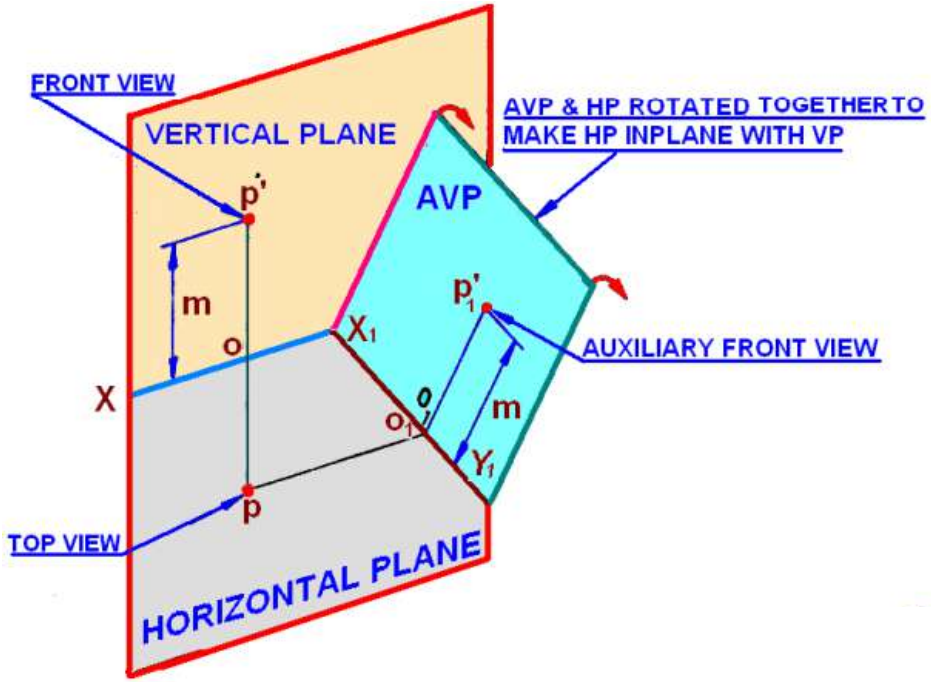
Auxiliary Vertical Plane

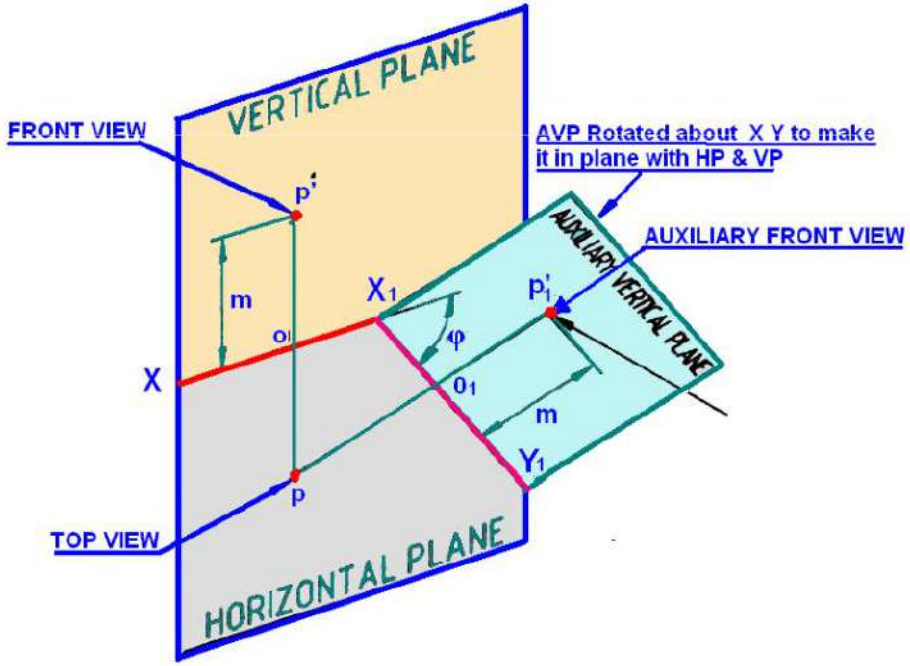


Auxiliary Inclined Plane

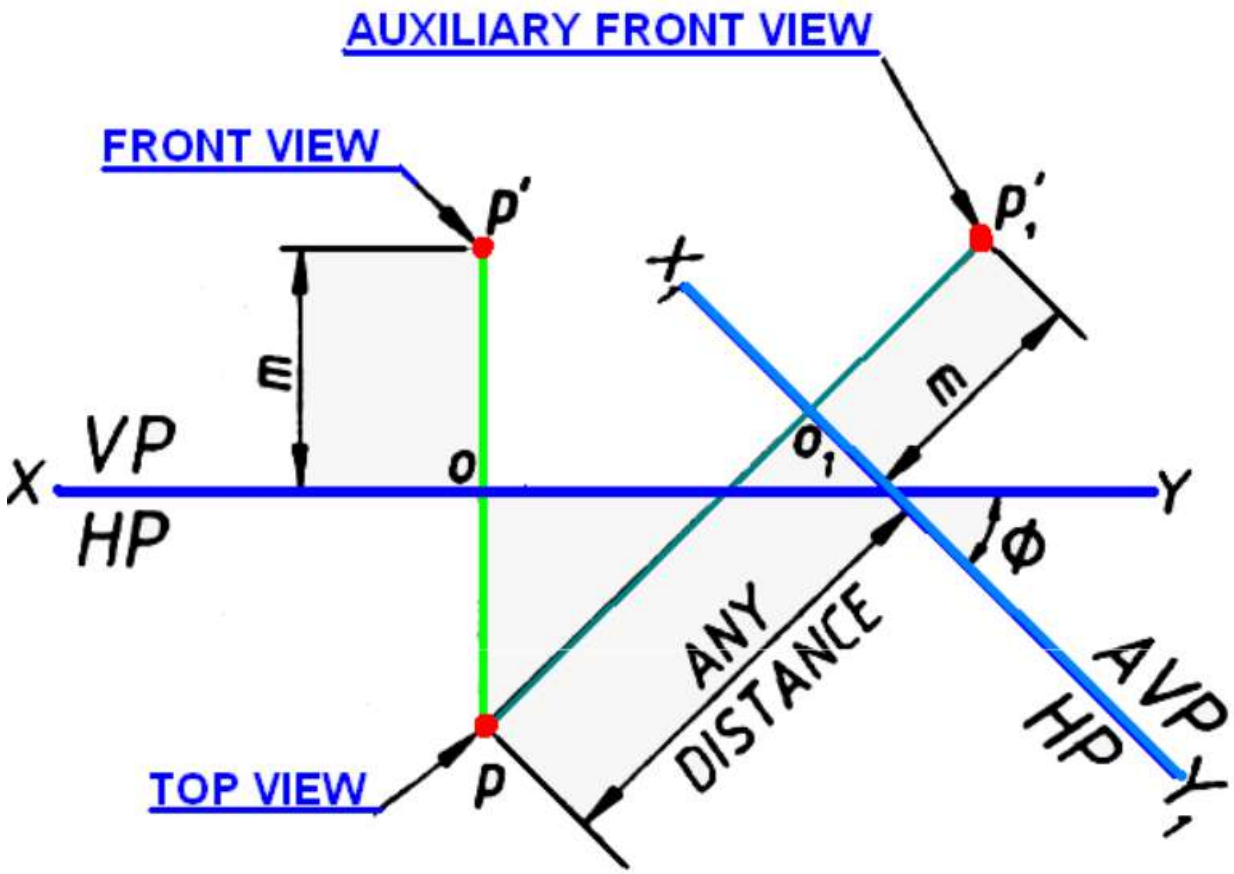
Projection of Points on Auxiliary Planes



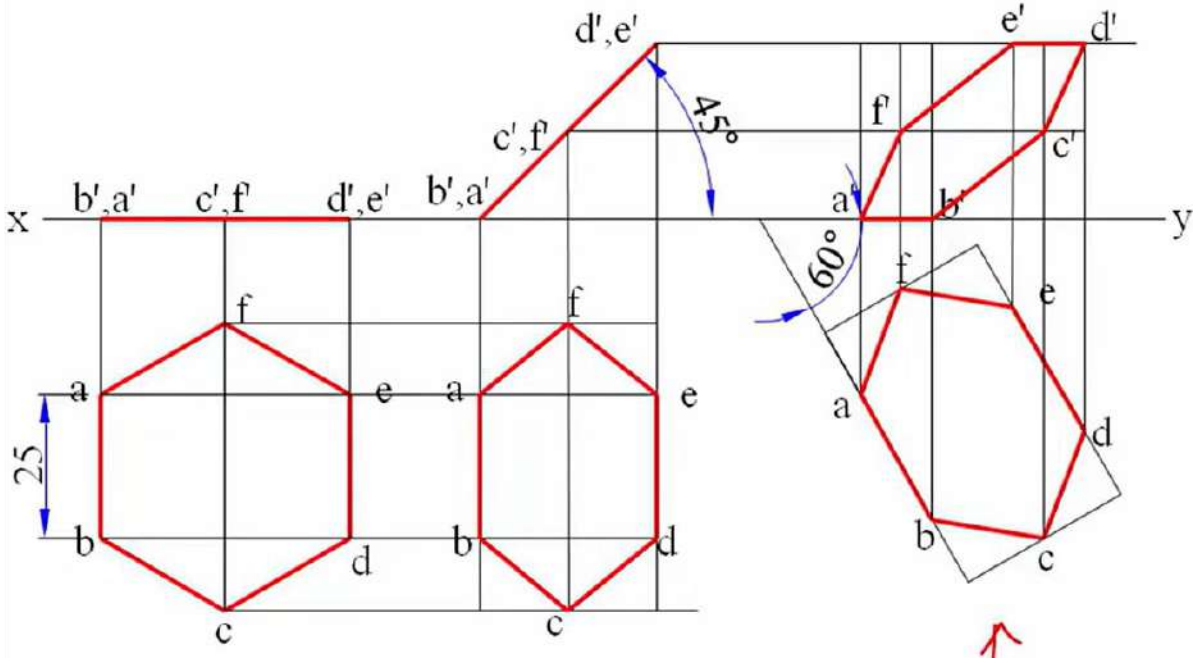


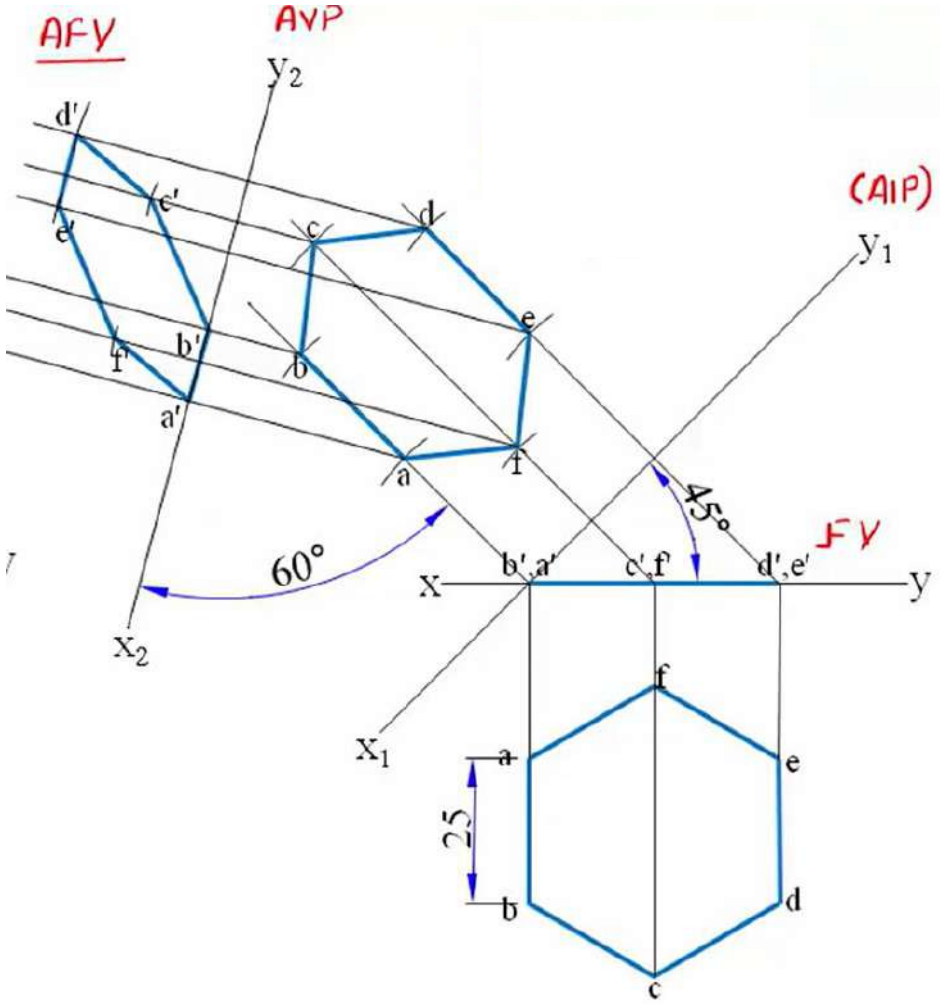


Orthographic projections (representing three-dimensional objects in two dimensions)

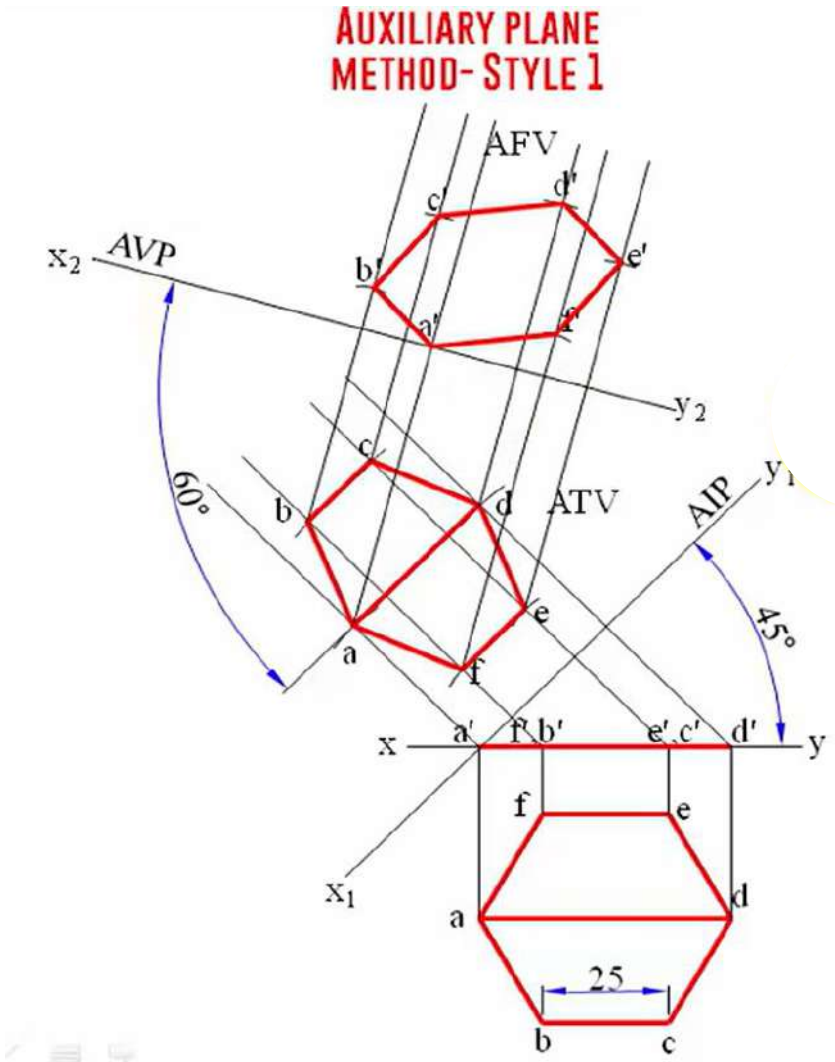


Q1 Draw the projections of a regular hexagon of 25 mm side, having one of its sides in the HP and inclined at 60° to the VP and its surface making an angle of 45° with the HP. (Use Auxiliary Plane Method)





Q2 A regular hexagon of 25 mm side has a corner on the HP . Its surface inclined at 45° to the HP and top view of the diagonal through the corner which is in the HP makes an angle of 60° with the VP. Draw the projections. (Use Auxiliary Plane Method)



Q3 Draw the projections of a line **80 mm** long inclined at **30⁰** to **HP** and its top view appears to be inclined at **60⁰** to **VP**. One of the ends of the line is **45** mm above **HP** and **60** mm infront of **VP**. Draw its projections by auxiliary plane method