

### Line inclined to both Planes

1. The simplest position a straight line occupies in a space is, it is parallel to both V.P and H.P.
2. The above position resulting in straight line as a top view and front view.
3. For any other position first assume the given line parallel to both the planes.
4. Then decide the view which will give us the true length of the line and true inclination. Draw locus line in both the points(ends)
5. Rotate this view to the given angle to get the final view.
6. Project from it to get the other final view (foreshortened view).
7. Then rotate this foreshortened view to the locus of other point(end), to get the final views.

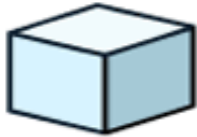
#### ***For example:***

- ***If a line is inclined to H.P, the front view will have the true length and true inclination.***
- ***Therefore rotate the front view to the given angle ( $\theta$  -theta) and project this line to get foreshortened top view.***
- ***Rotate the foreshortened top view to the locus of other point, to get the final top view.***
- ***If a line is inclined to V.P, the top view will have the true length and true inclination.***
- ***Therefore rotate the top view to the given angle ( $\phi$ -phi) and project this line to get foreshortened front view.***
- ***then rotate the foreshortened front view to the locus of other point, to get the final front view***

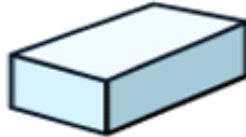
## Names of solids



sphere



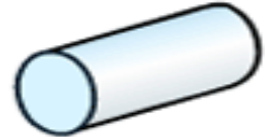
cube



cuboid



cone



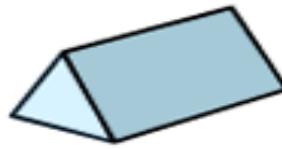
cylinder



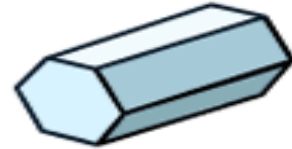
square-  
based  
pyramid



triangular-  
based  
pyramid



triangular  
prism



hexagonal  
prism

When the axis of the solid inclined any of the projection planes,

1. First assume the axis is perpendicular to that plane.
2. Draw the projection in simple position
  - A. Top view first if the axis is perpendicular to HP
  - B. Front view first if the axis is perpendicular to VP
3. Change position of the view to the given inclination
  - A. Tilt the front view, if the axis inclined to the HP
  - B. Tilt the top view, if the axis inclined to the VP
4. Project from this view to get the final view
  - A. Project from the front view, to get the top view if the axis inclined to the HP
  - B. Project from the **top view**, to get the **front view** if the axis inclined to the **VP**

5. Ensure all the points are named in an appropriate manner
  - A. Lower case letters with a (')dash for the front views
  - B. Lower case letters alone for the top views