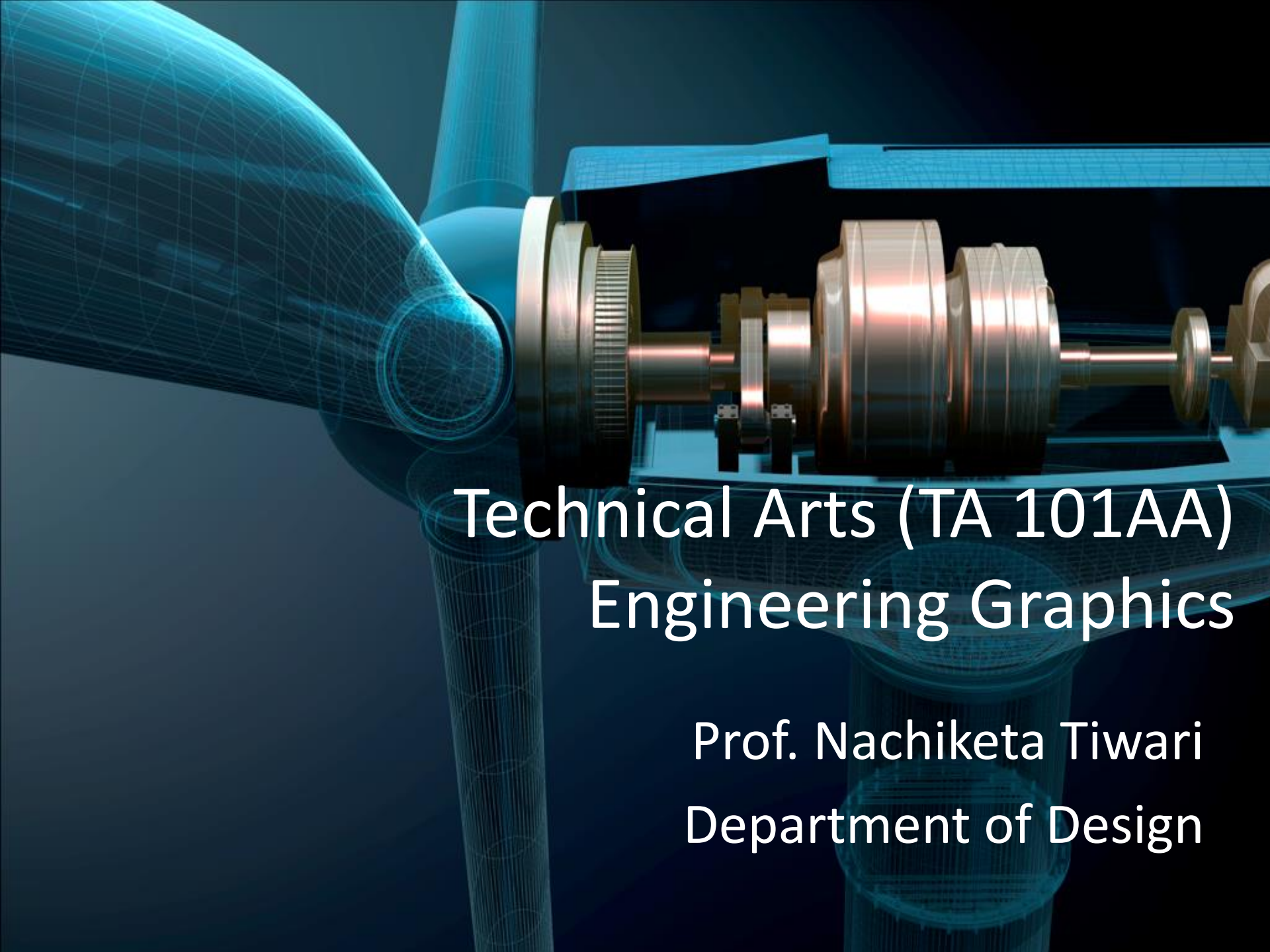


Technical Arts (TA 101AA)
Engineering Graphics

Prof. Nachiketa Tiwari
Department of Design

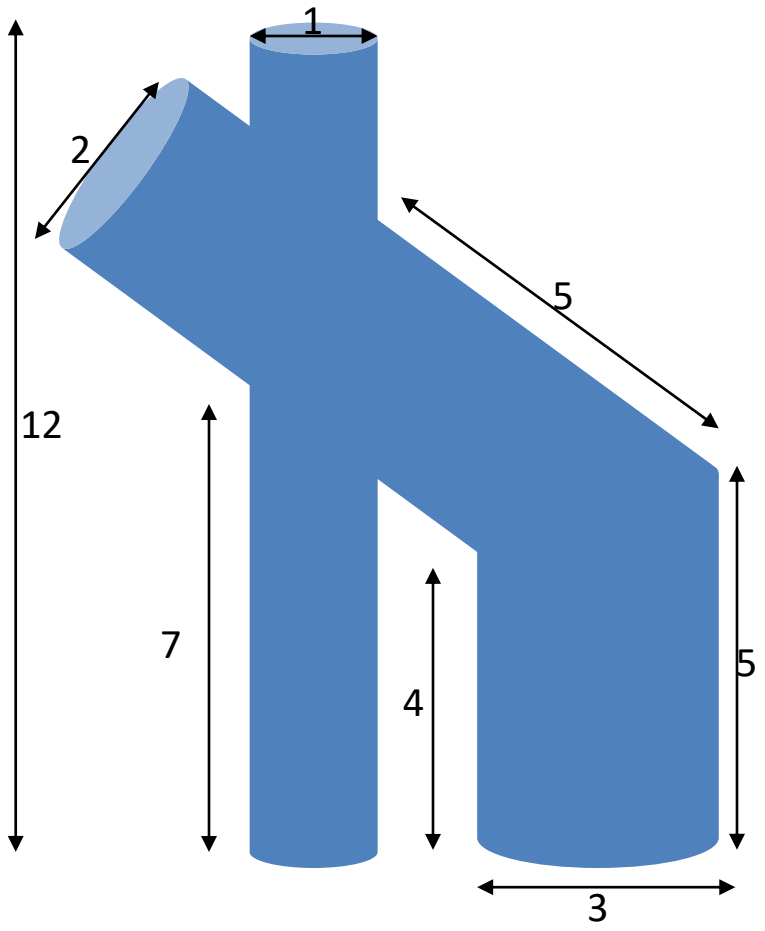
ABOUT MID-SEMESTER EXAM

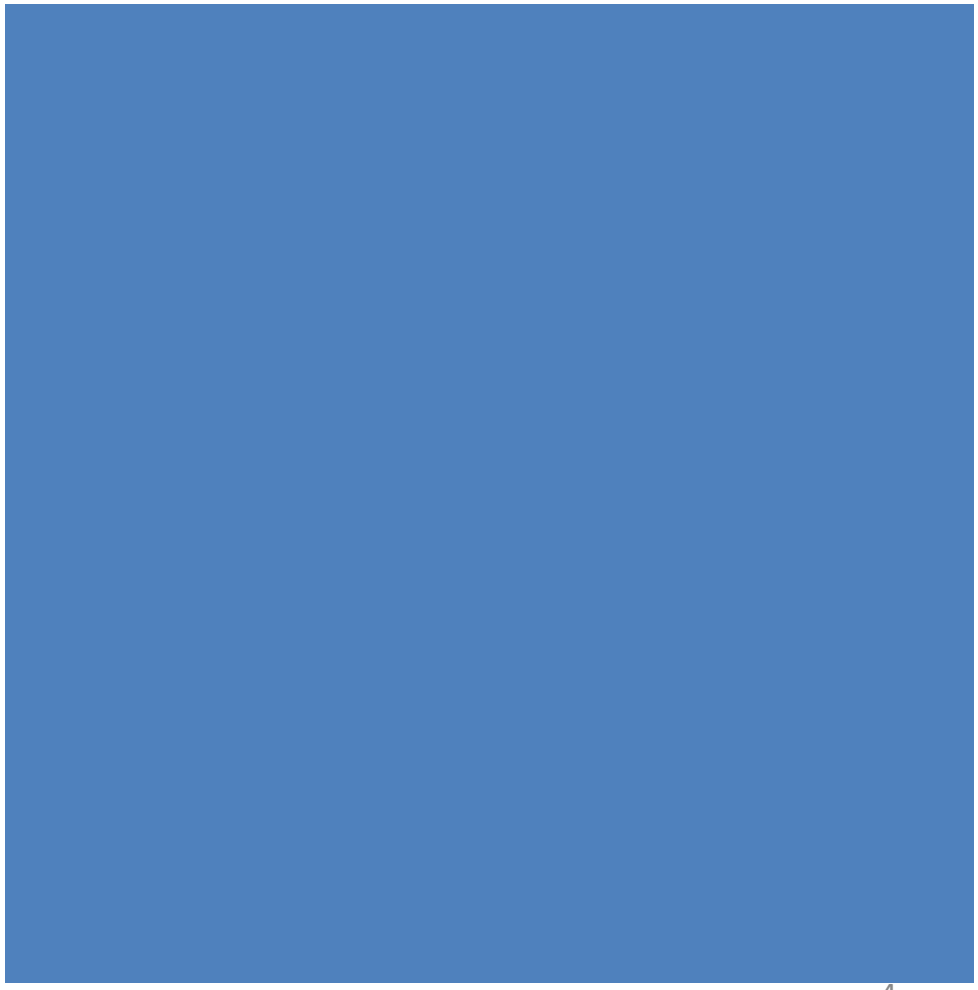
- May 14th, 2022.
- Totally offline.
- Will have examination in two batches.
  - Batch 1: 10 AM to 12 noon
  - Batch 2: 1 PM to 3 PM
- Batch 1 has to report at 9.30 AM.
- Batch 2 has to report at 12.30 PM.
- Do not come late.
- Bring your instruments.
- No mobile phones inside examination halls.

Auxiliary Views

Question?

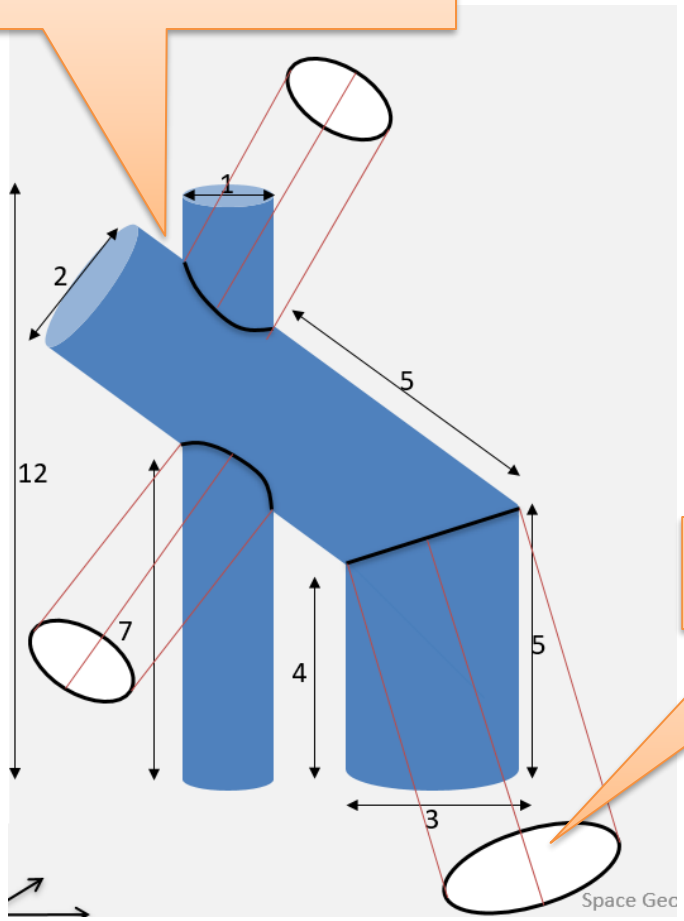
- How should we trim a flat sheet for making the part on the left?



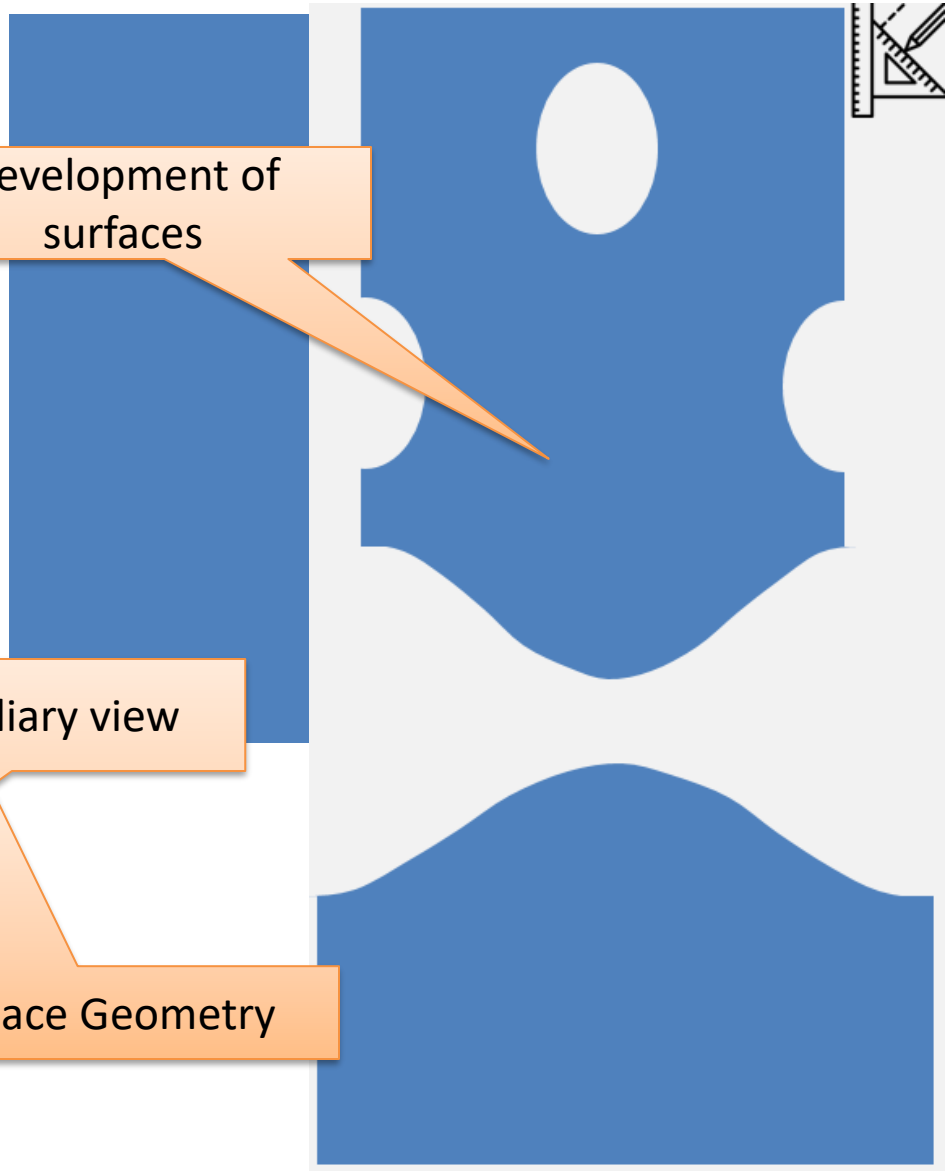


Approach

Intersection of surfaces



Development of surfaces

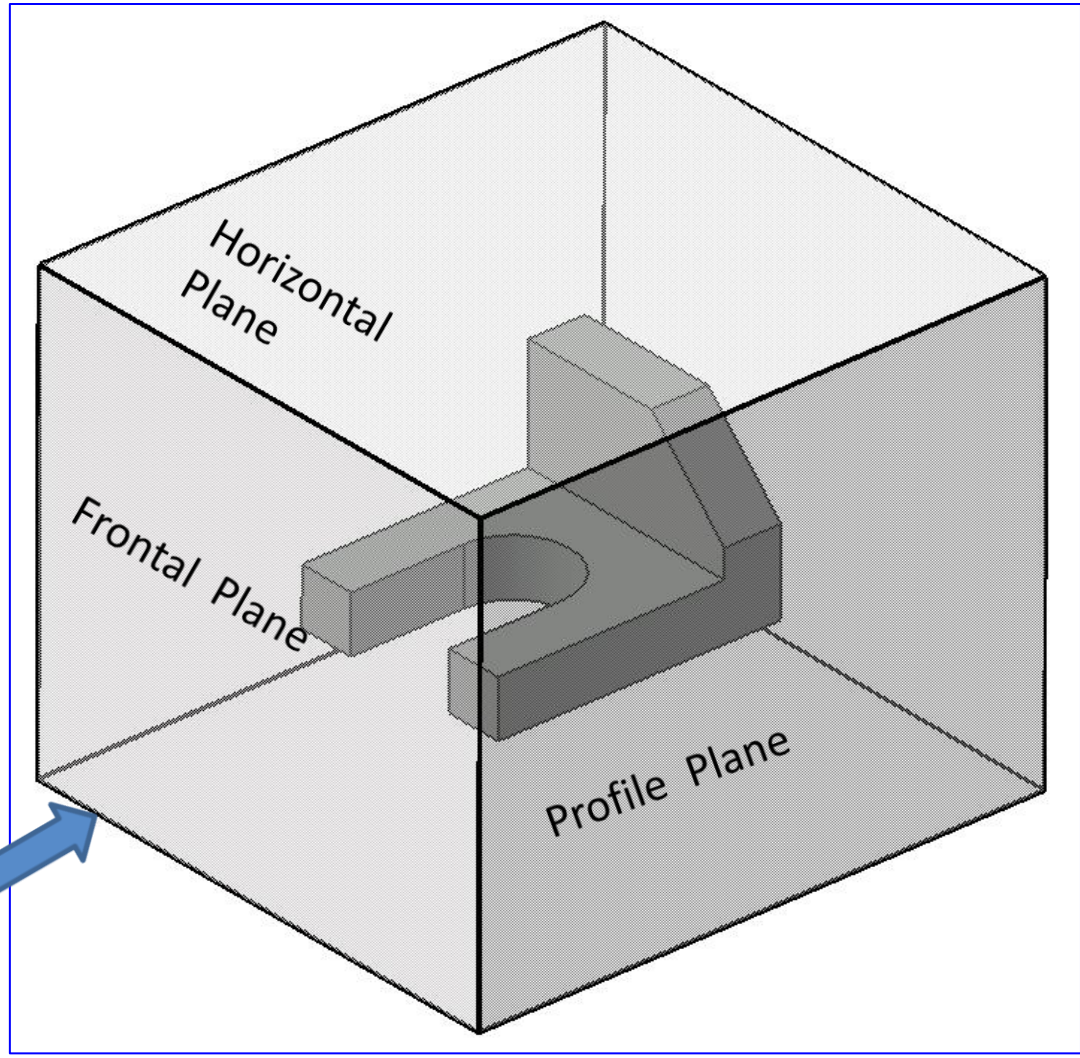


Auxiliary view

Space Geometry

Principal Orthographic Views: Review

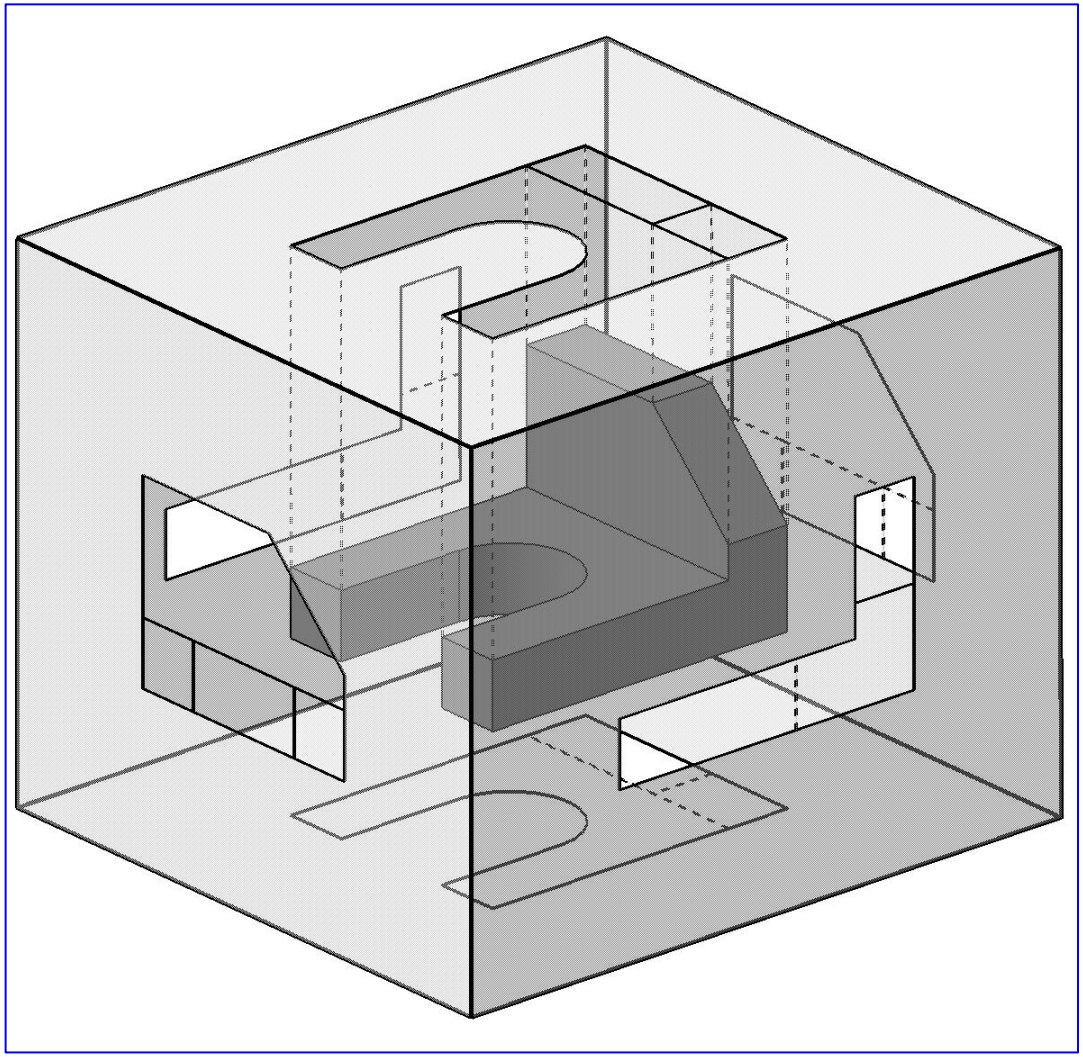
- The object is placed inside a glass box.
- The sides of the box represent the 6 principal planes.
- Planes connected by hinge joints.



Glass Box Method

- The image of the object is projected on the sides of the box.

- But there could be surfaces which will appear distorted.
  - Some planes may not be seen in respective true shapes.

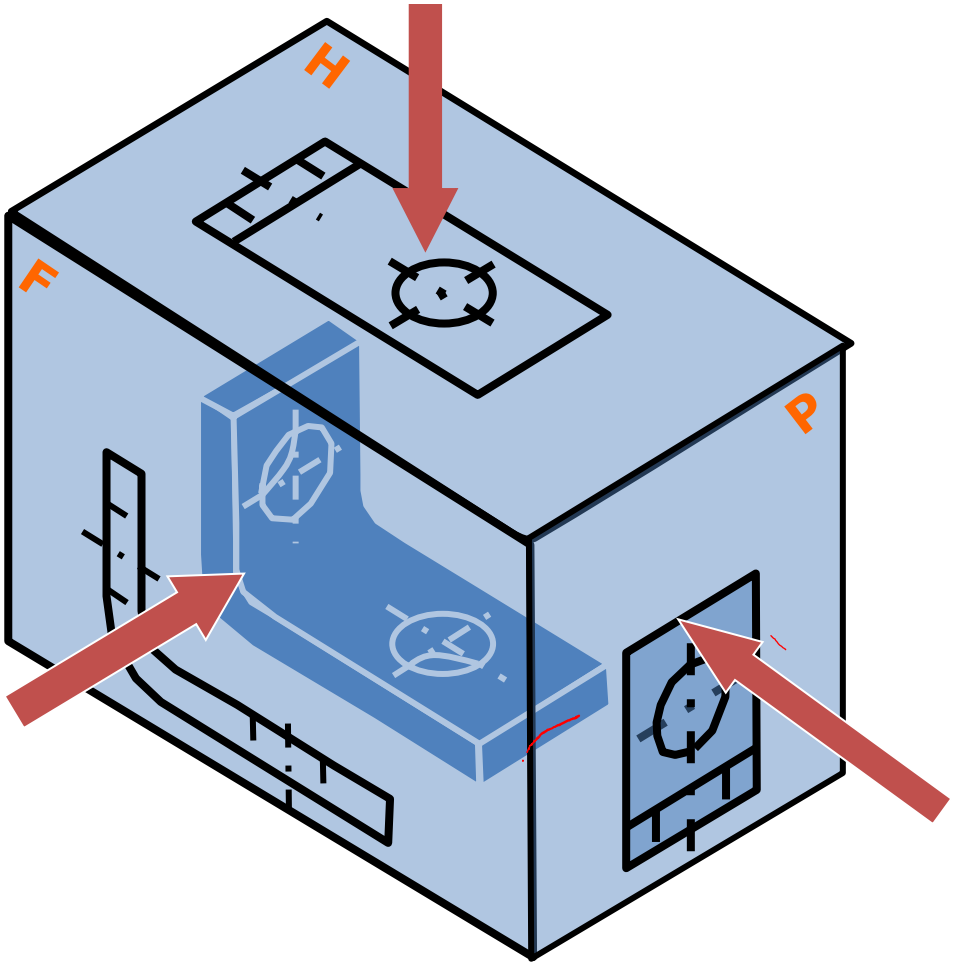


Important Points

- Foreshortening of lines that are inclined to the H/F/P planes.

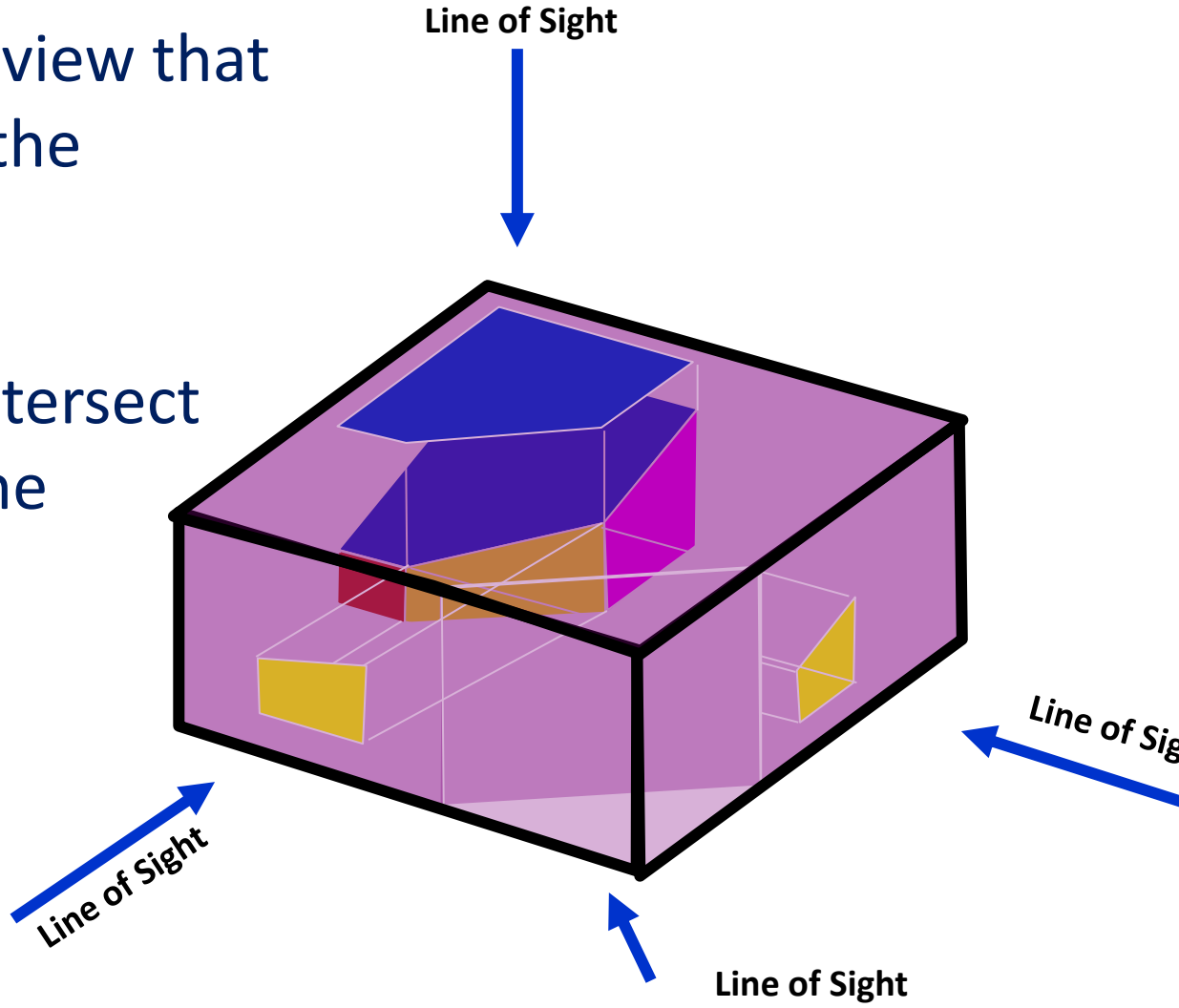
- Normal or “true shapes” cannot be drawn if its planes are inclined to H/F/P planes.

Principal Orthographic Views

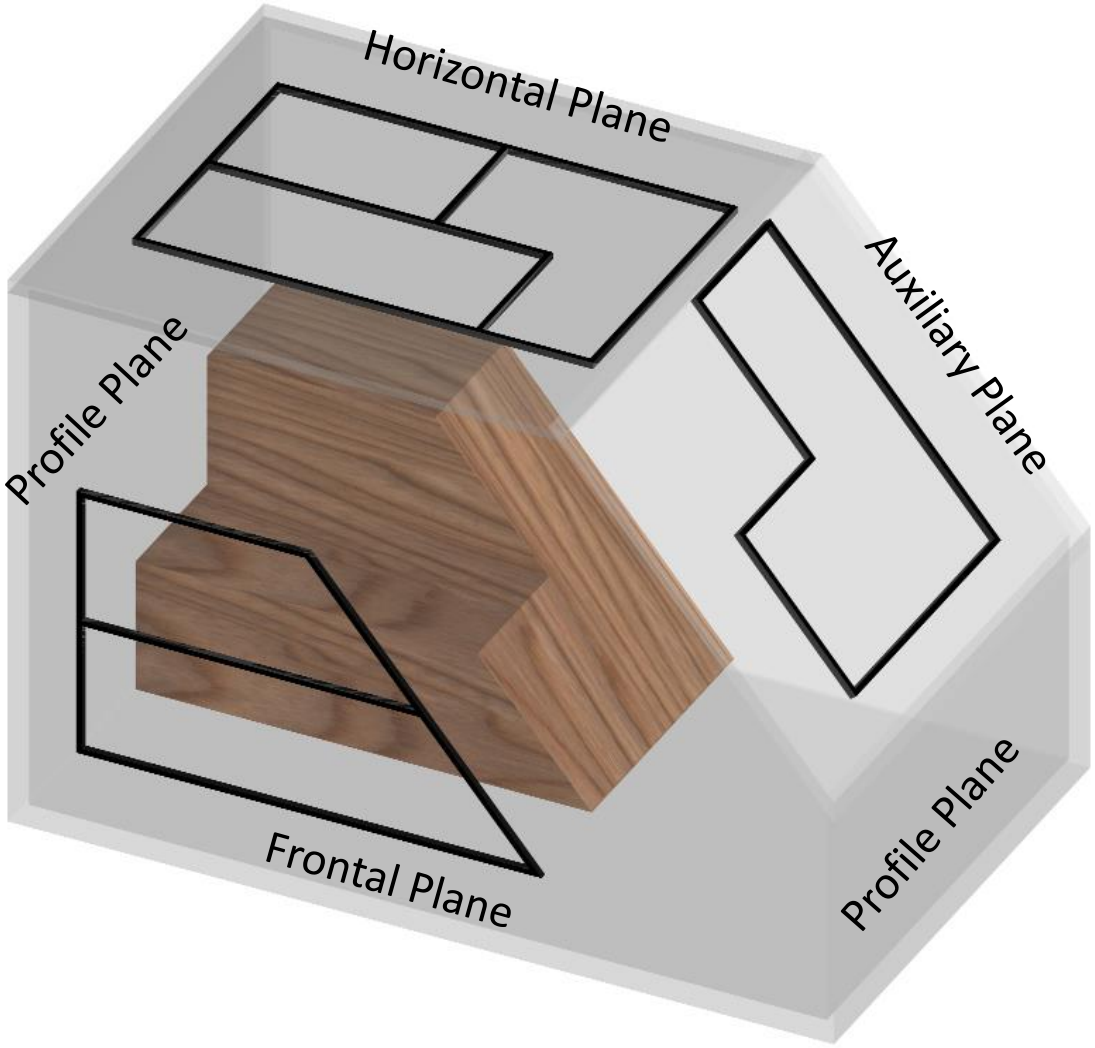


Auxiliary View

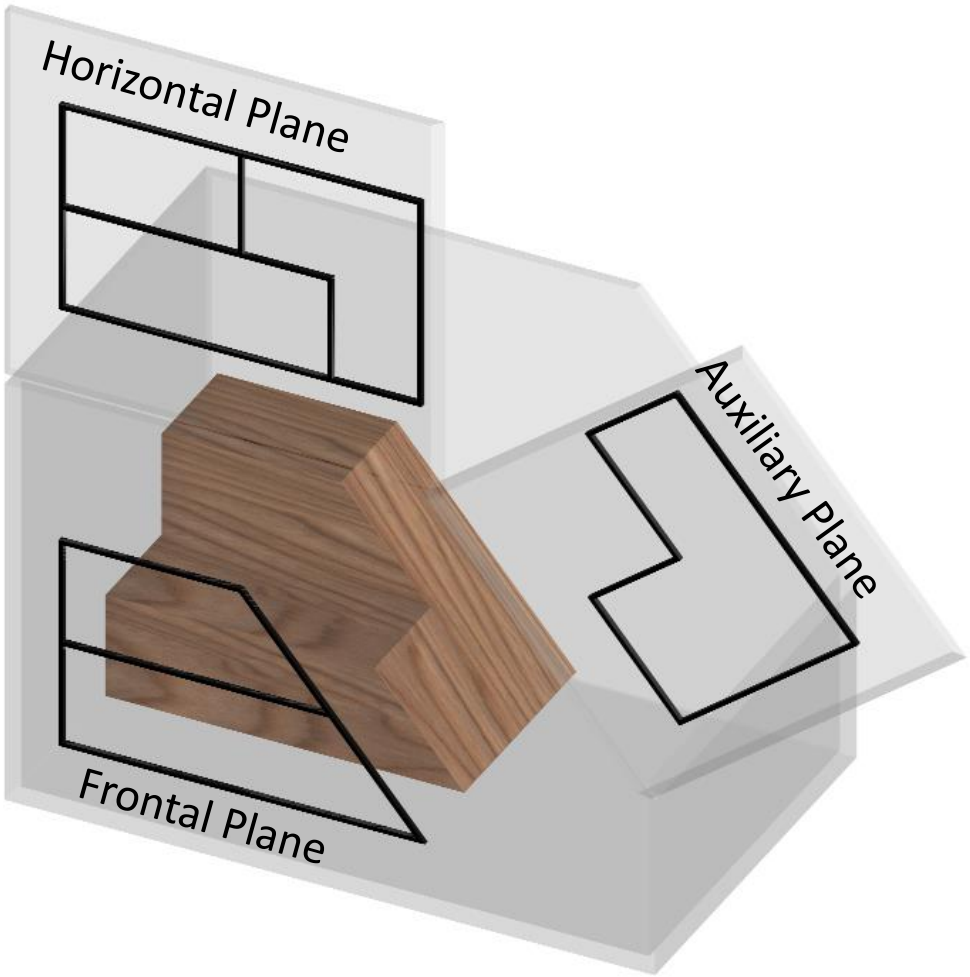
- An orthographic view that is not on one of the principal plane.
- Projector lines intersect the auxiliary plane normally.



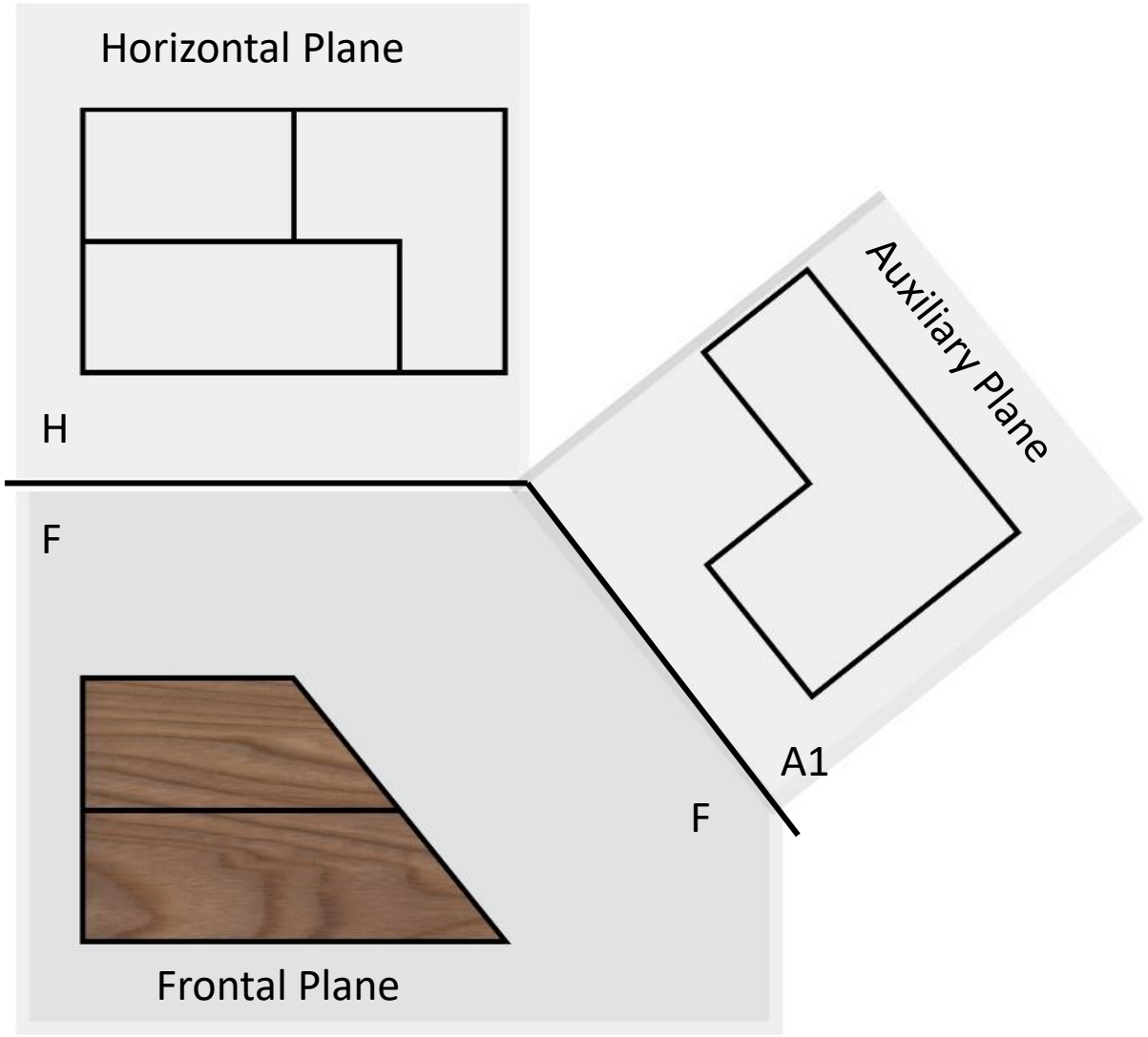
The Auxiliary Box



Unfolding the Box



Completed Auxiliary View



Viewing Direction for Auxiliary Views

- If the viewing direction is perpendicular to the target surface, one gets the “Normal View”.

- Some views
  - Normal view of a line: True length
  - Point view of a line
  - Edge view of a plane
  - Normal view of a plane: True surface

Illustration: Developing Auxiliary Views

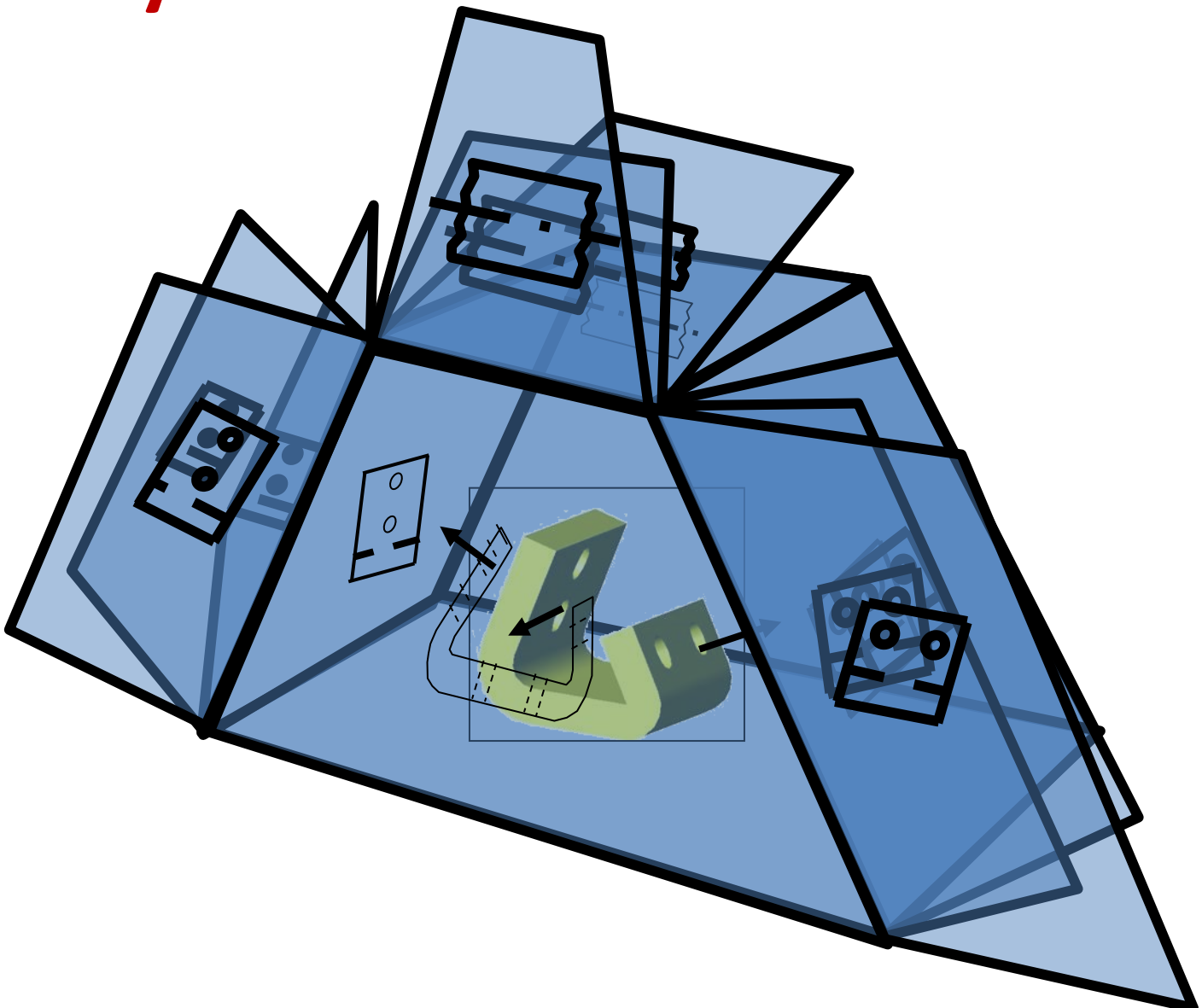
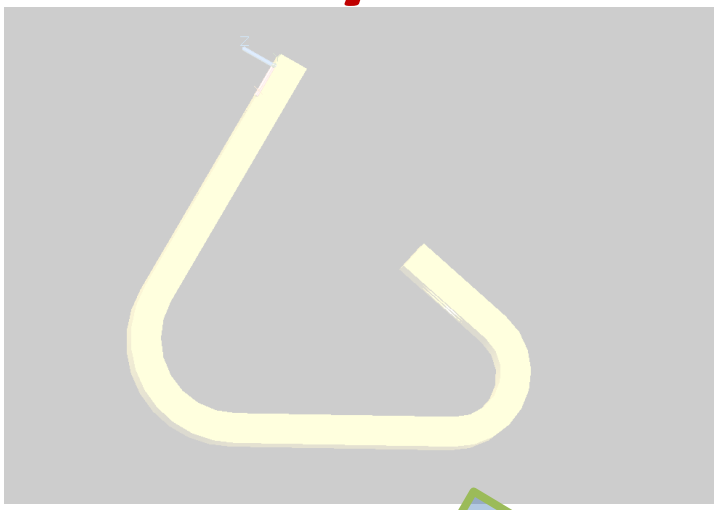
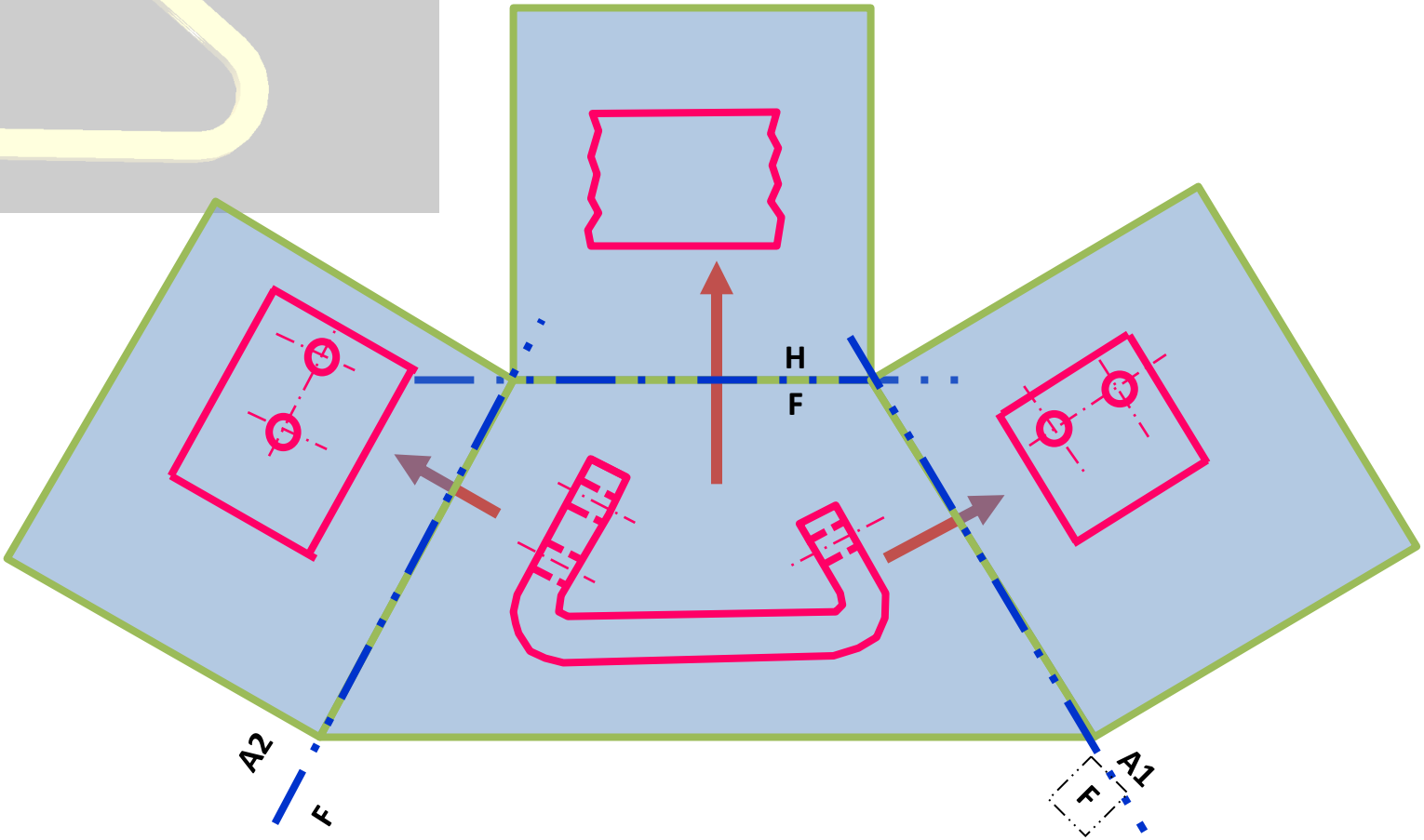
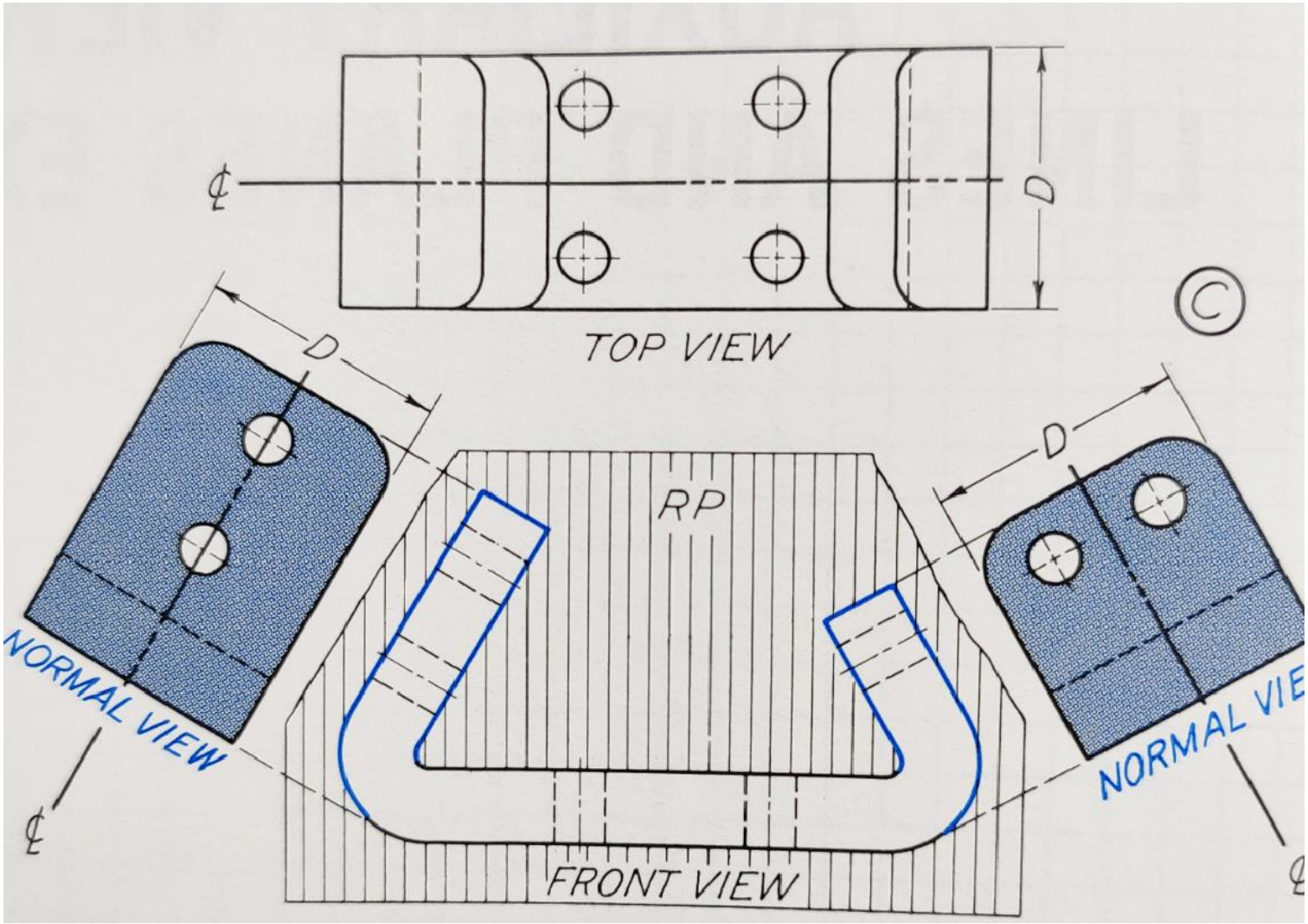


Illustration: Developing Auxiliary Views



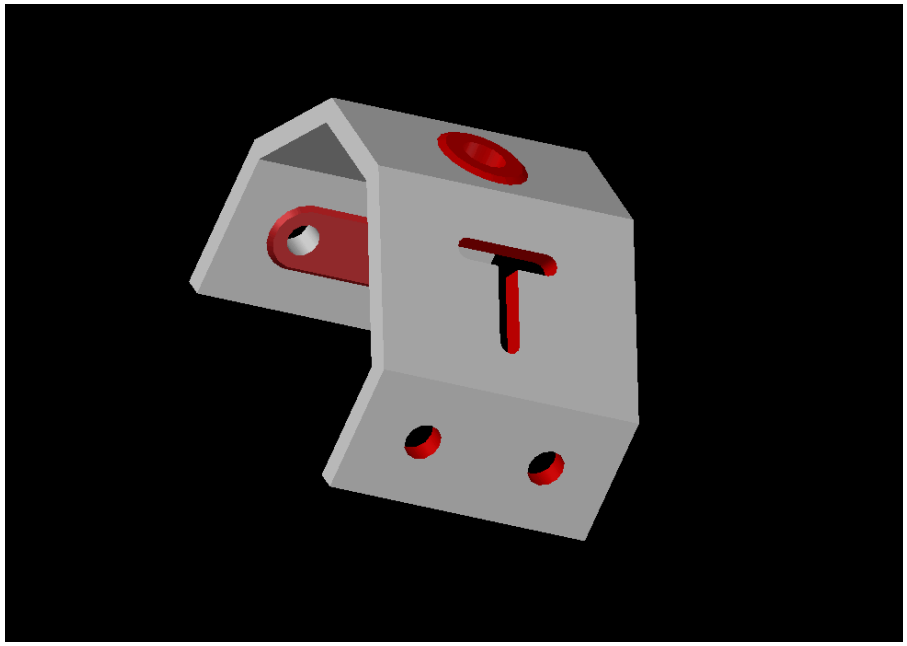


Auxiliary View : Orthographic View that is not on Principal Planes



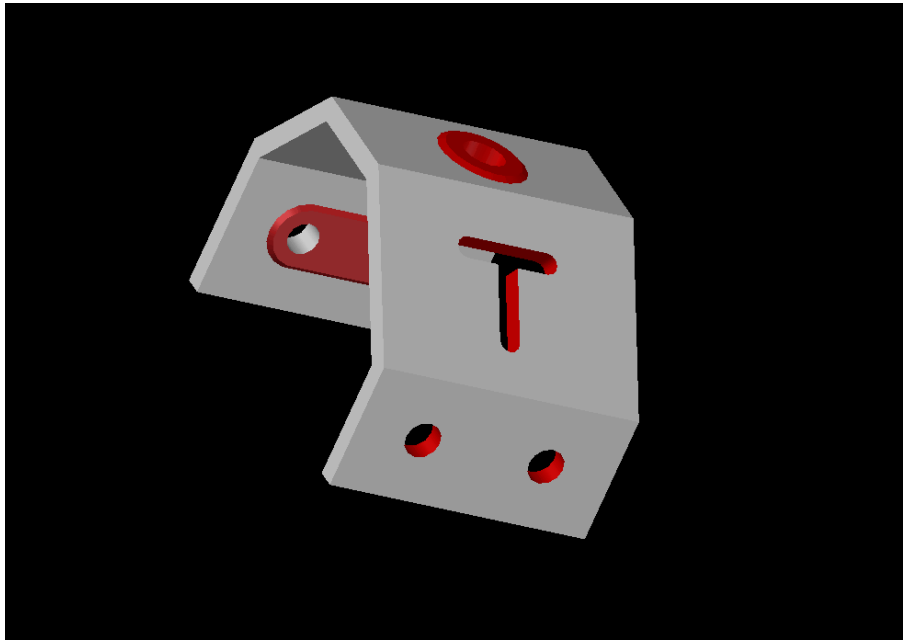
Auxiliary Views:

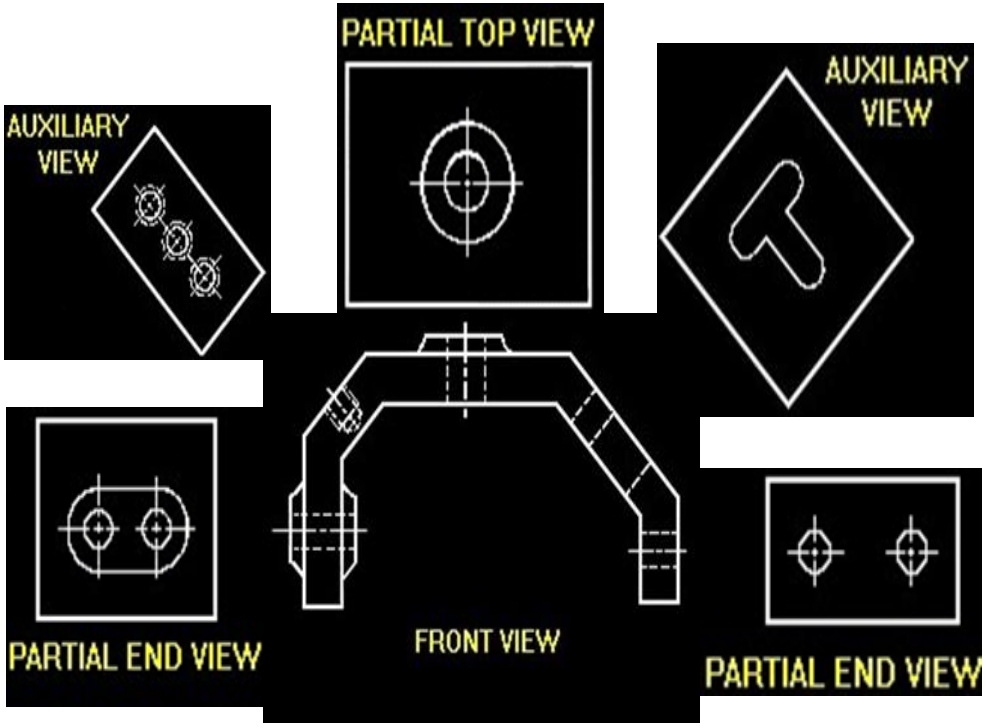
How Many Views for This Object?



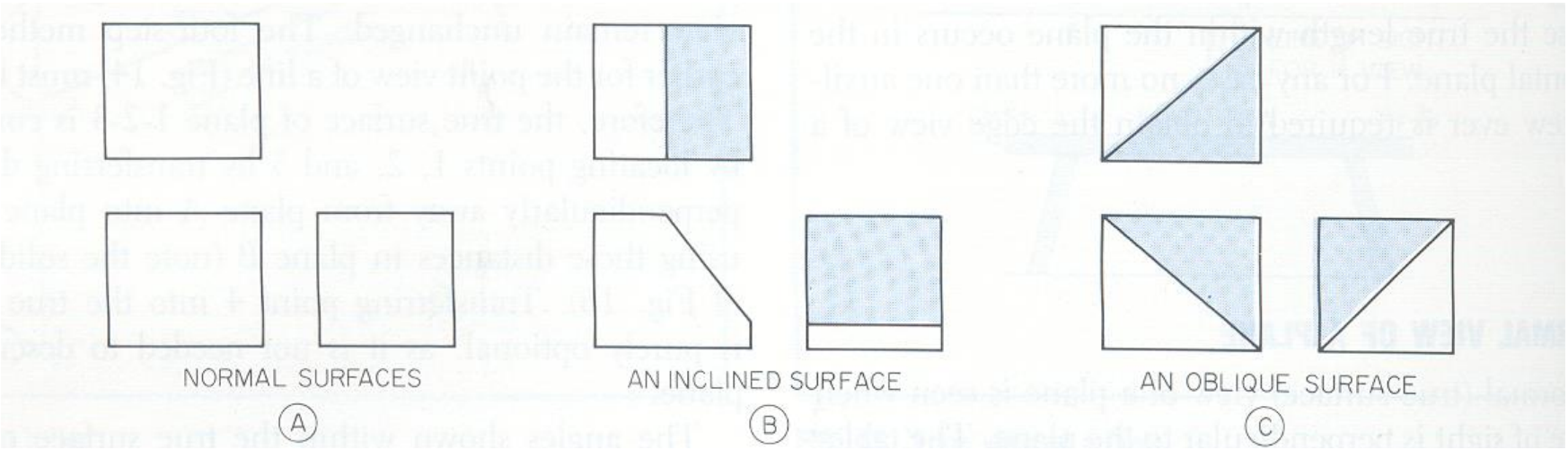
Auxiliary Views:
How Many Views for This Object?

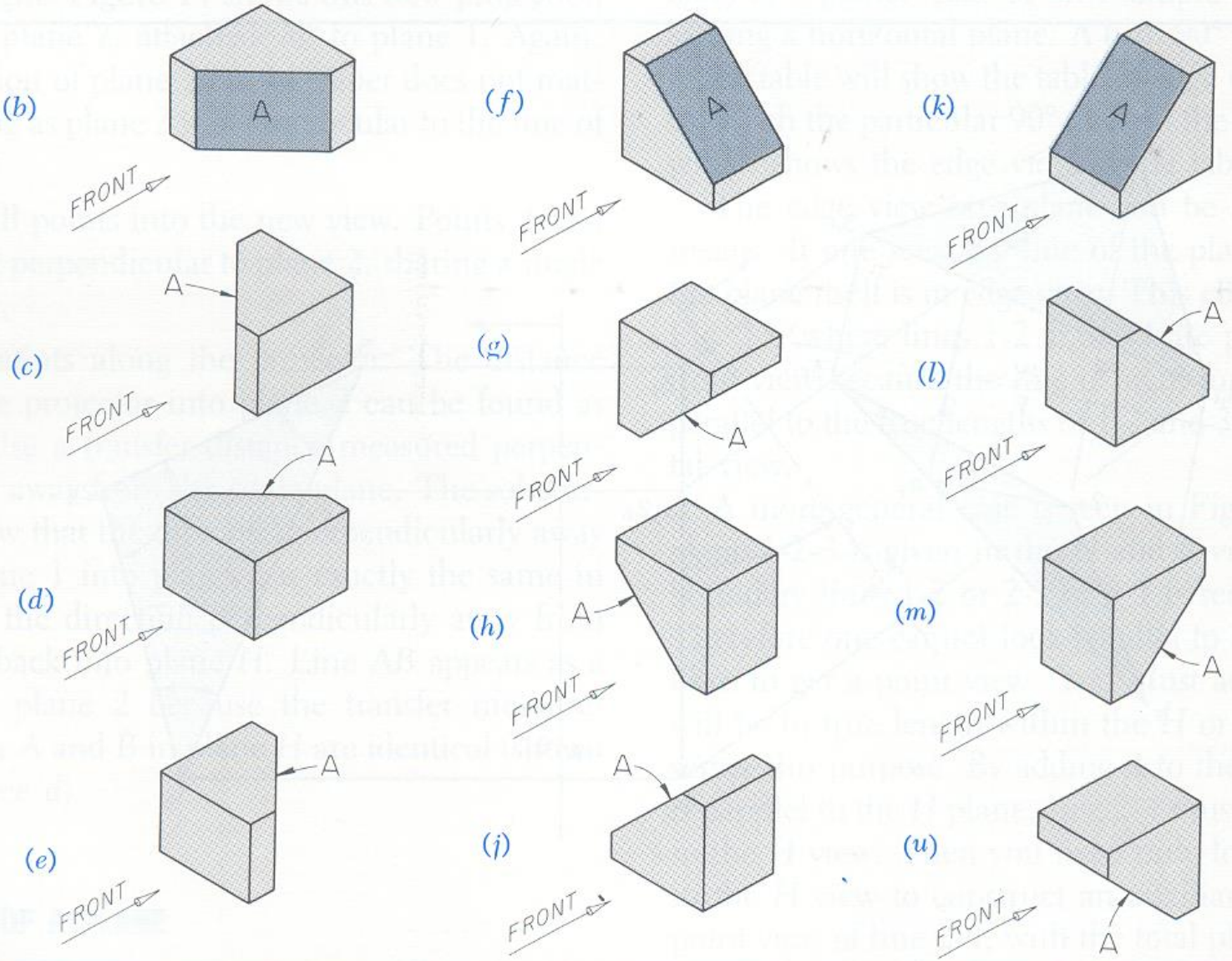
- Four orthogonal views: Include two partials.
- Two auxiliary views.



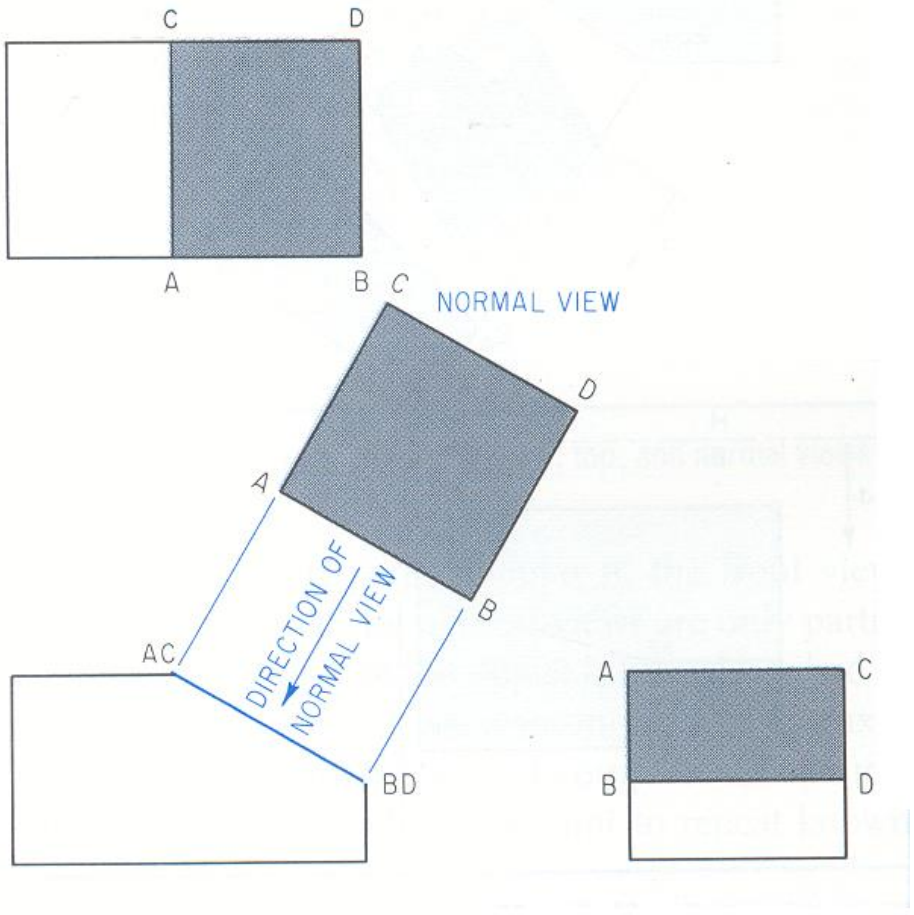


Examples: Objects with Inclined Faces: *Inclined to How Many Planes?*

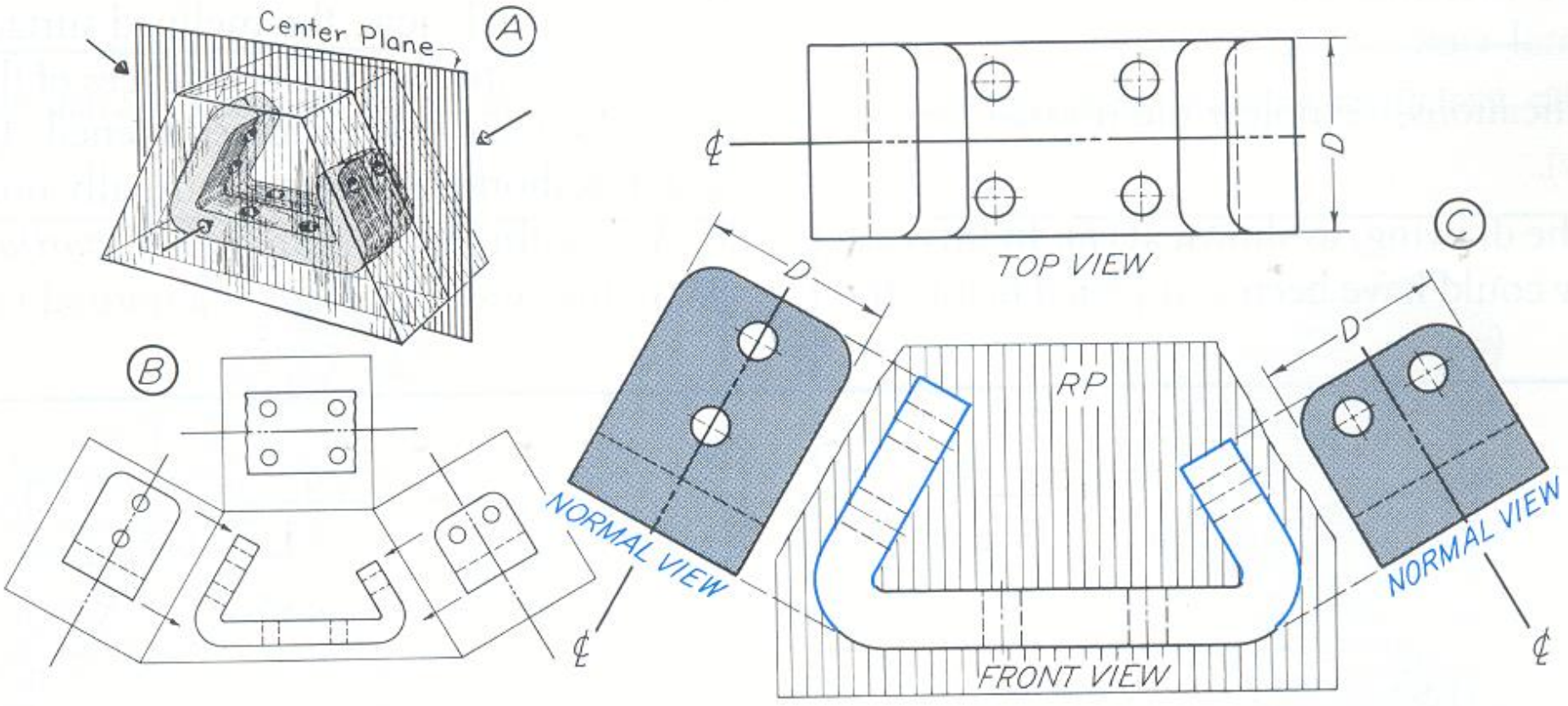



(b)
A
FRONT
(c)
A
FRONT
(d)
A
FRONT
(e)
A
FRONT
(f)
A
FRONT
(g)
A
FRONT
(h)
A
FRONT
(j)
A
FRONT
(k)
A
FRONT
(l)
A
FRONT
(m)
A
FRONT
(u)
A
FRONT

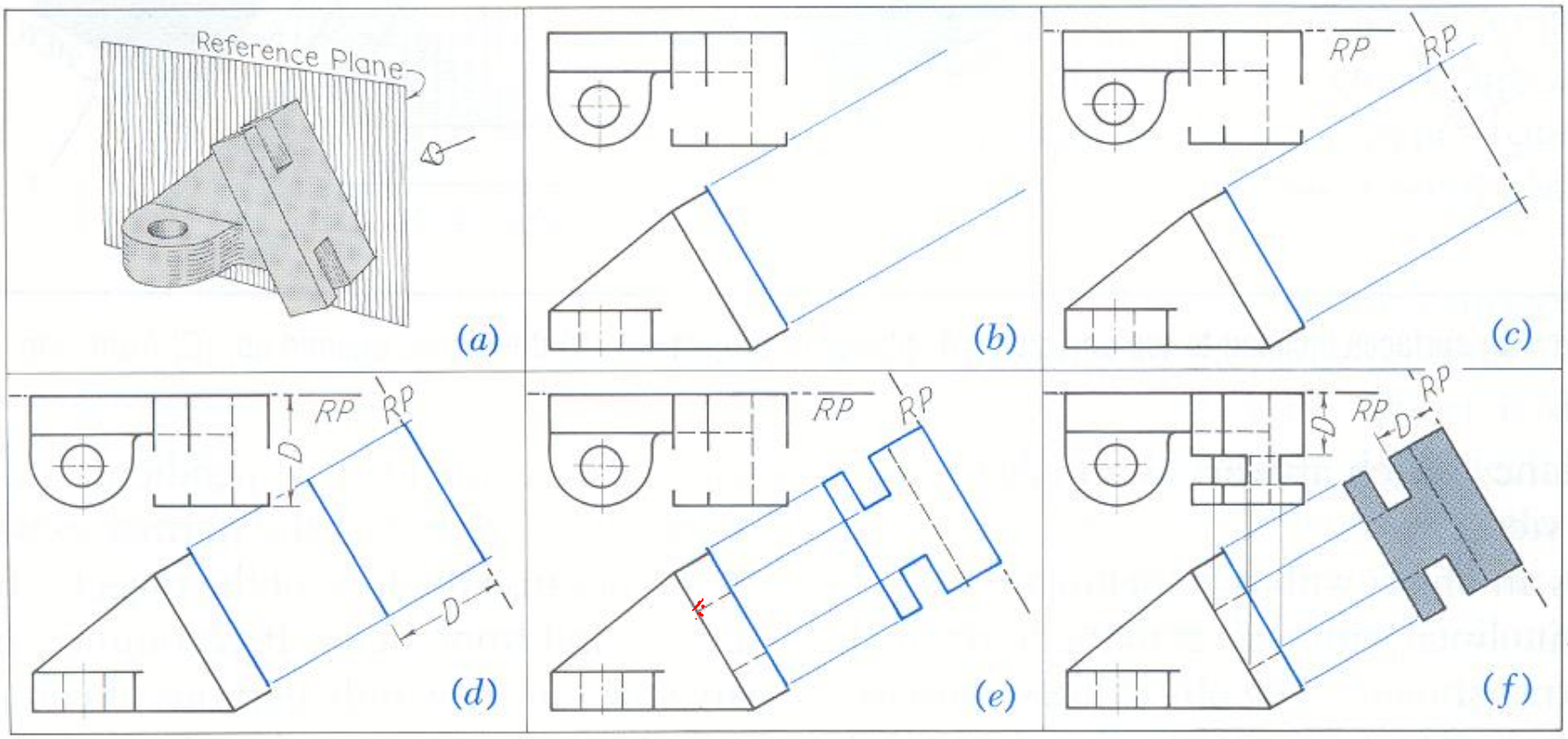
Auxiliary Planes:
Foreshortening of Lines



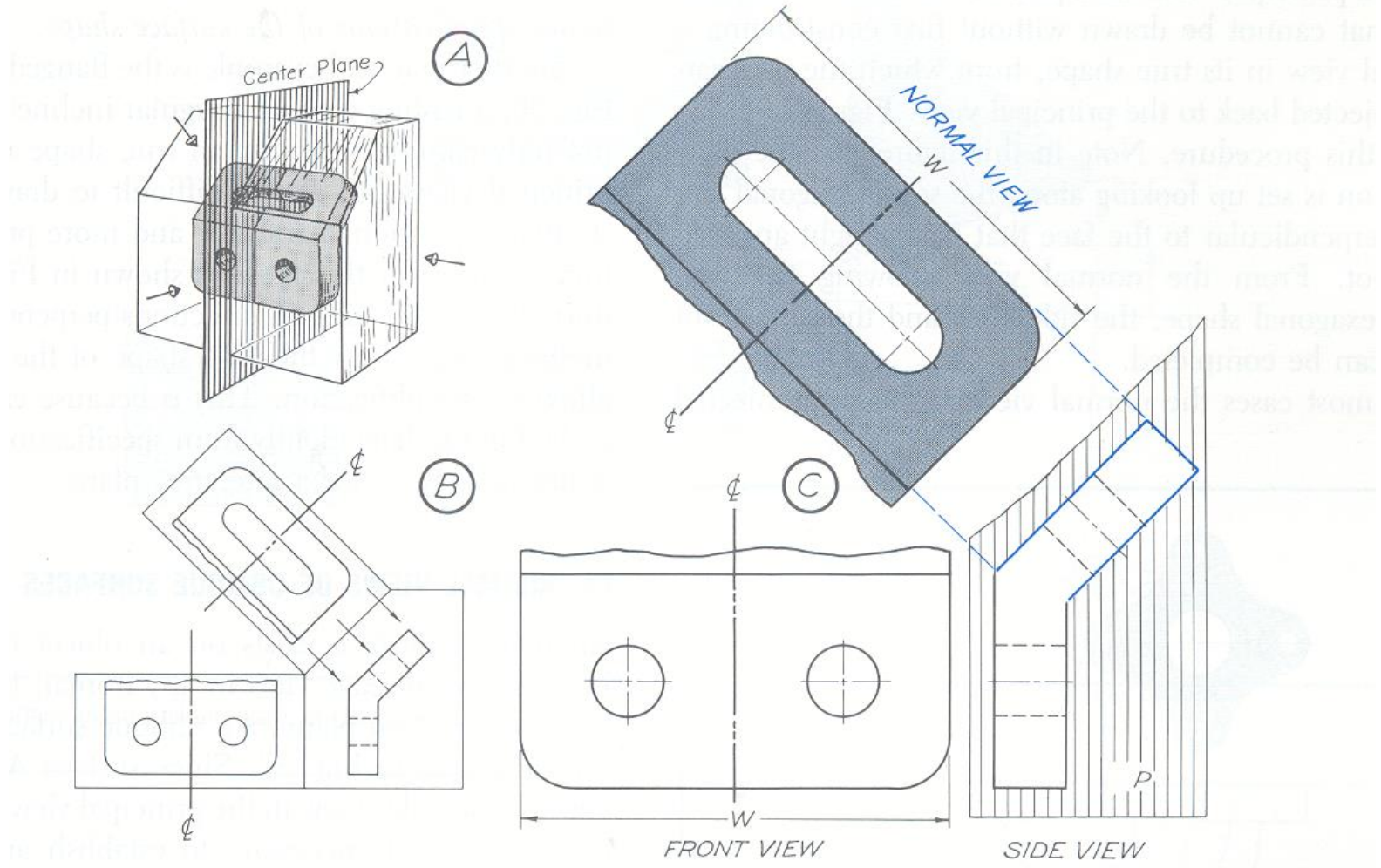
Positioning the Central Plane



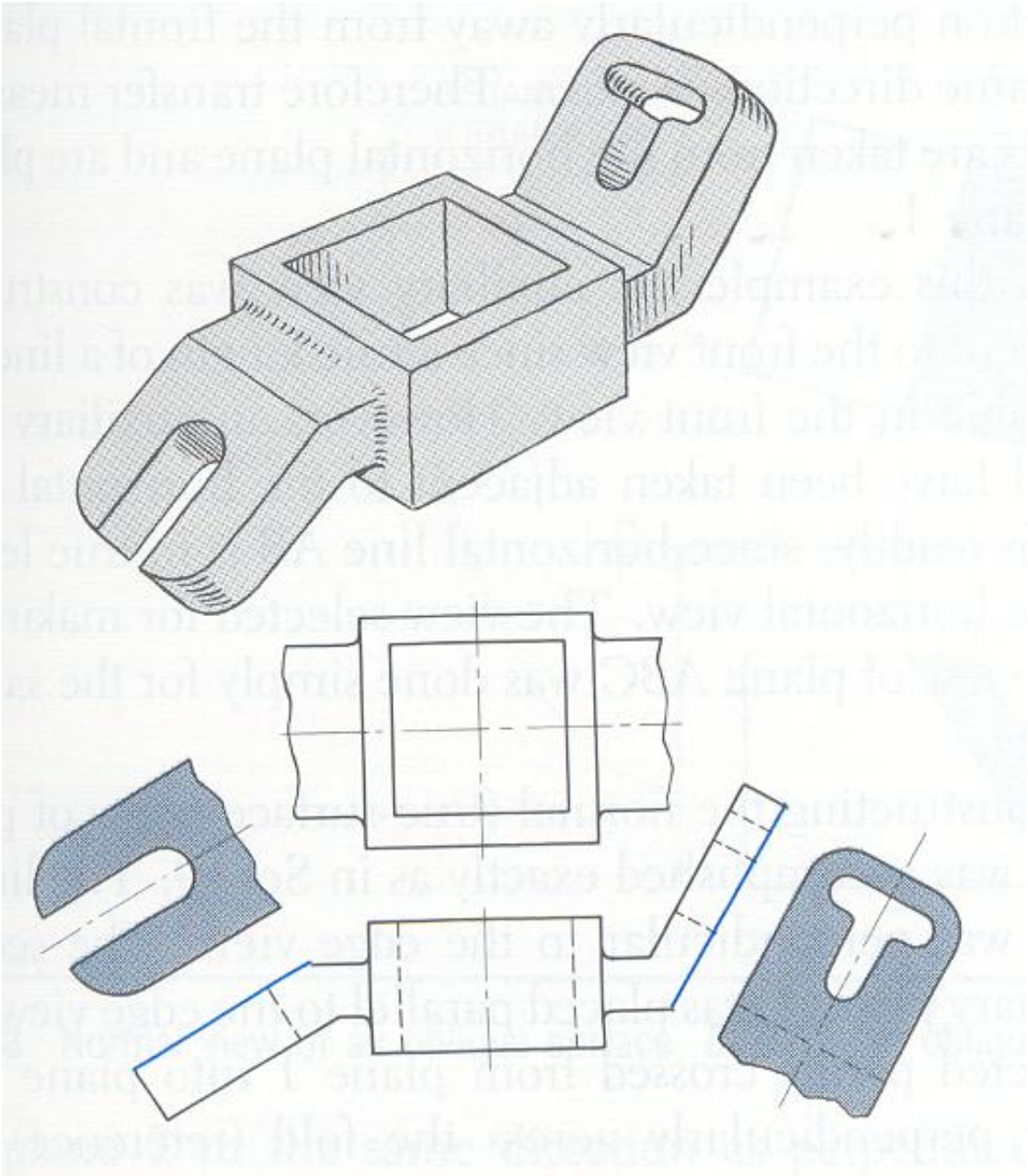
1. Draw the partial front and top views and locate the view direction.
2. Locate the reference plane a in (c)
3. Transfer distance from reference plane to normal view. (d).
4. Complete normal view.
5. Complete the top view.



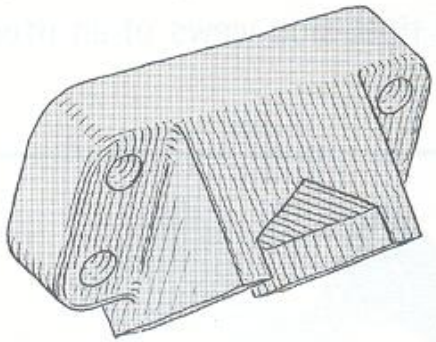
Note: Sometimes Foreshortened Views are Not Shown Completely (Partial Views)



Partial Views



Normal view and
based on it other views



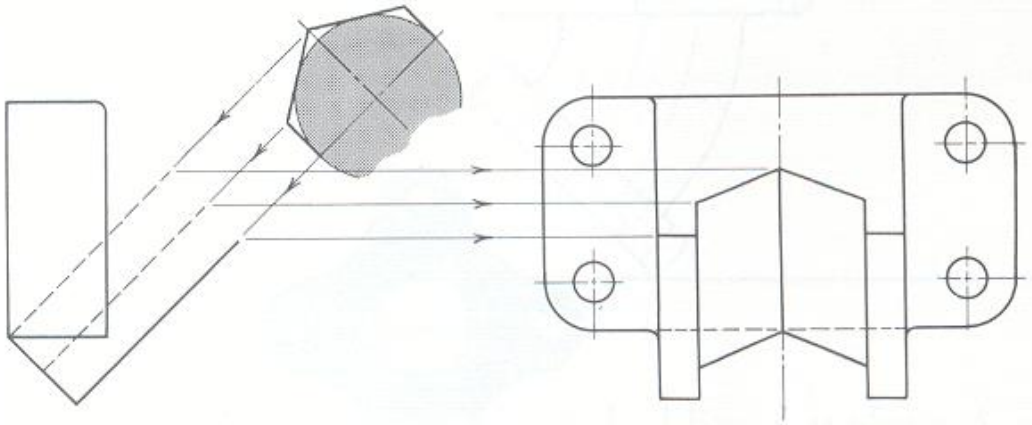
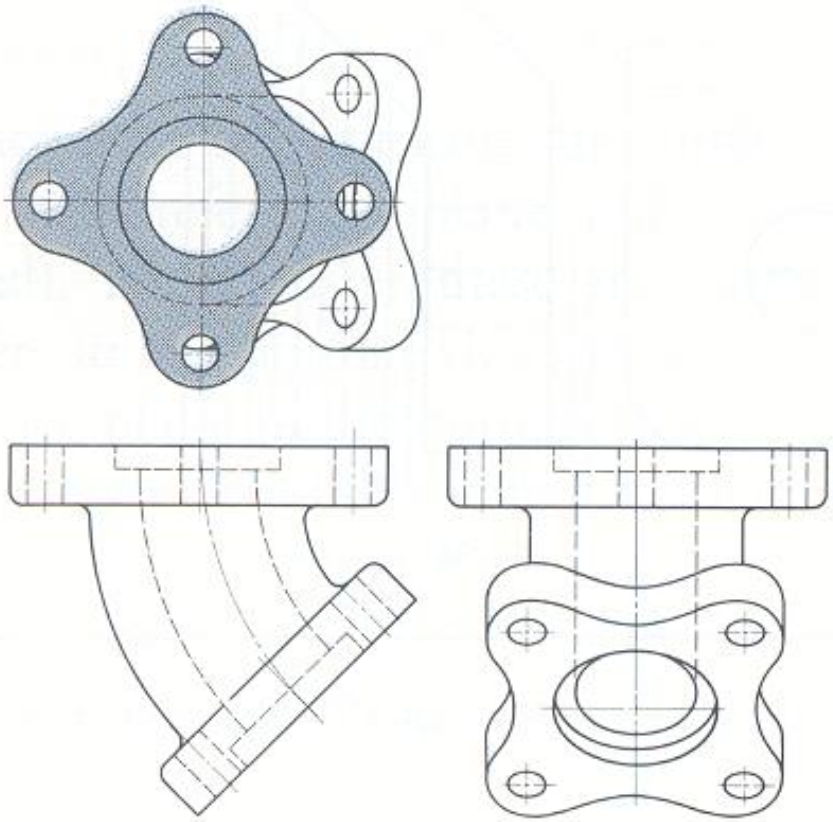
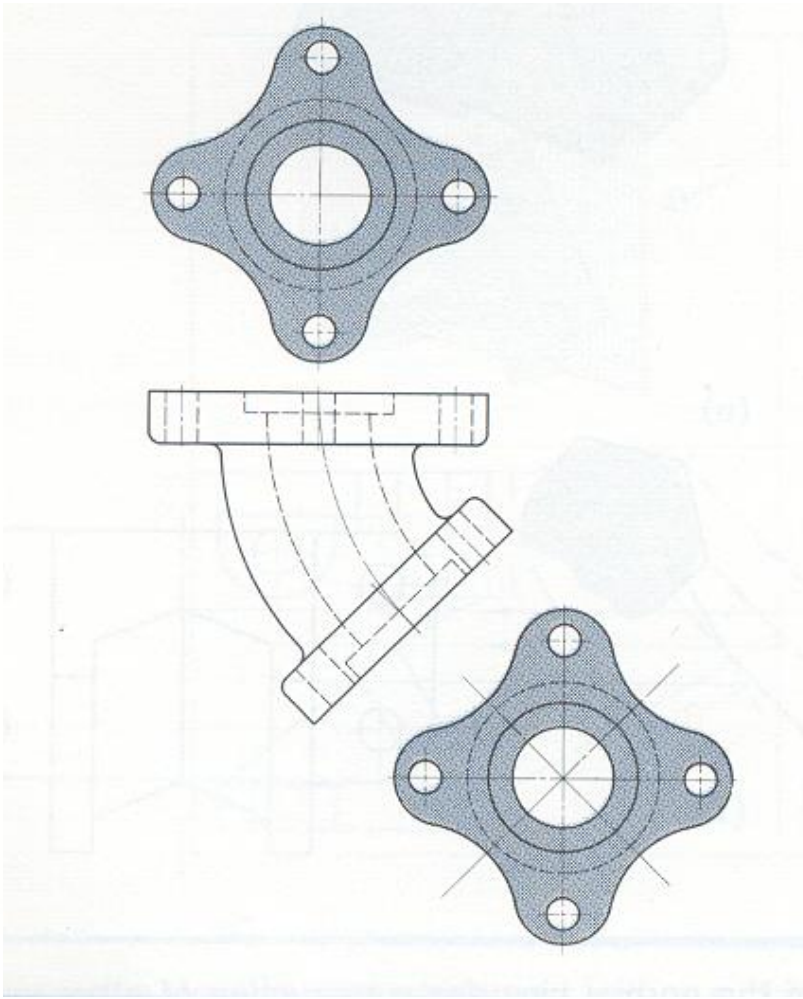
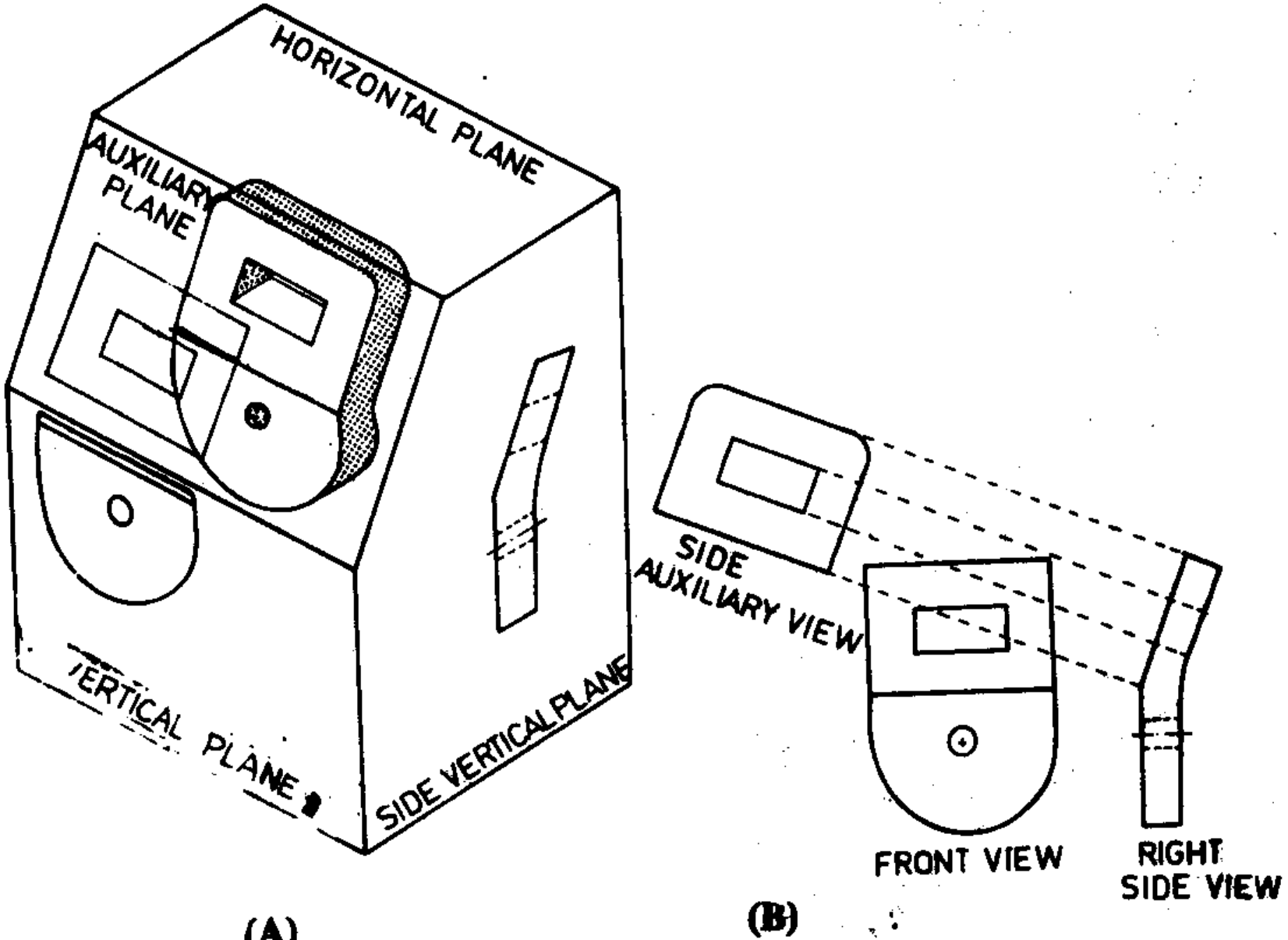


Illustration: Draw the normal surface first then complete the drawing via auxiliary views.

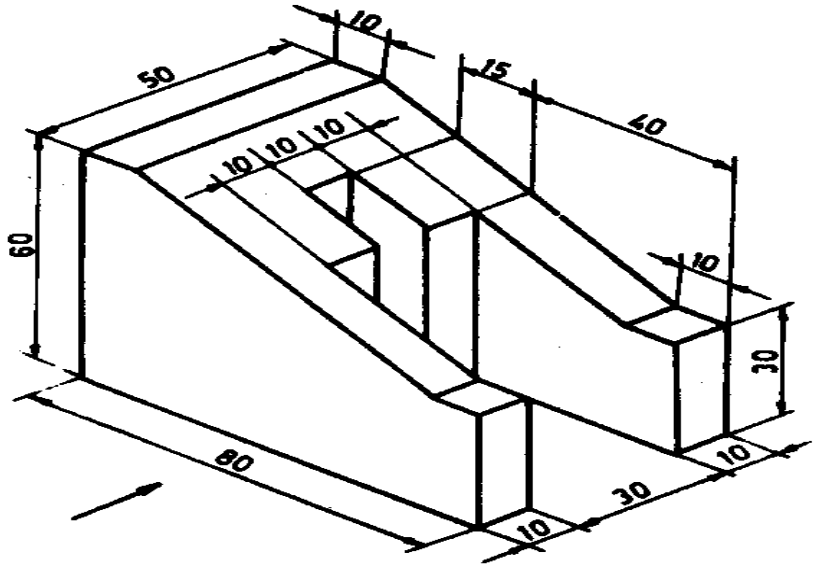




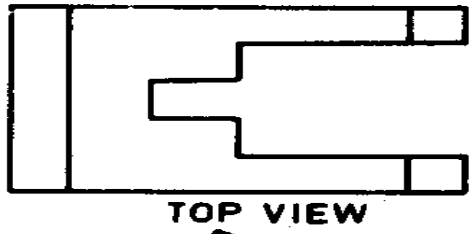
Side Auxiliary View

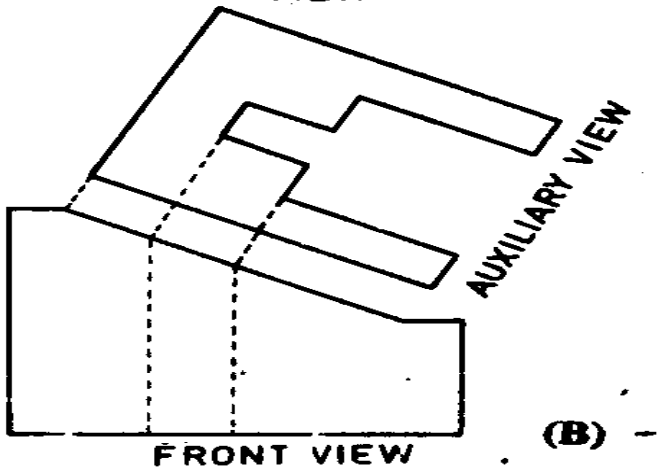


Front Auxiliary View



(A)





(B)


Thank You