



ME-160

Mechanical Engineering Drawing

Auxiliary Views

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Course Teachers:

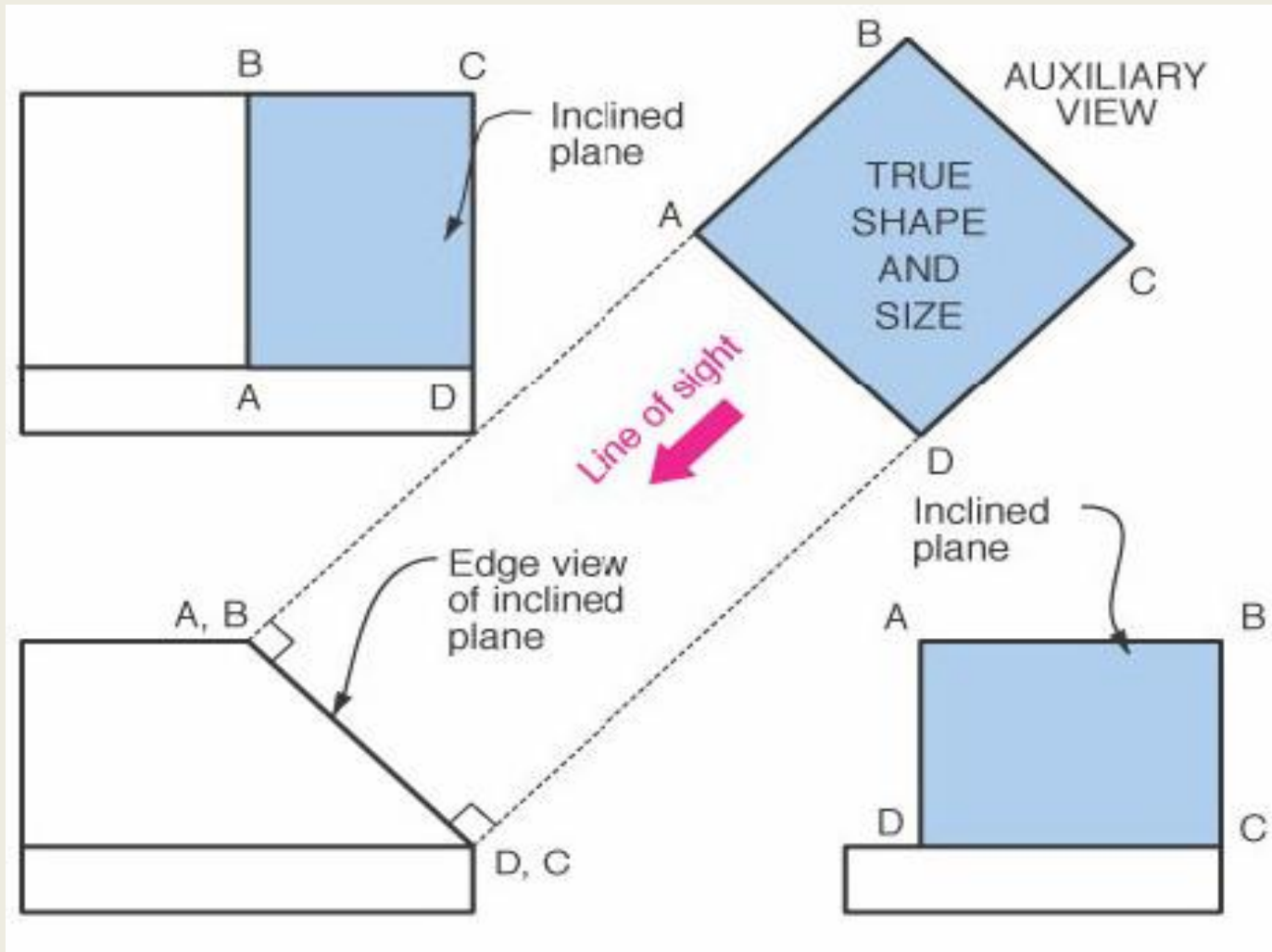
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What is Auxiliary View ?

- An auxiliary view is an orthographic view taken in such a manner that the lines of sight **are not parallel** to the principal projection planes.
- An auxiliary view is not one of the six principal views.

Let's see an example !

Auxiliary View: Example



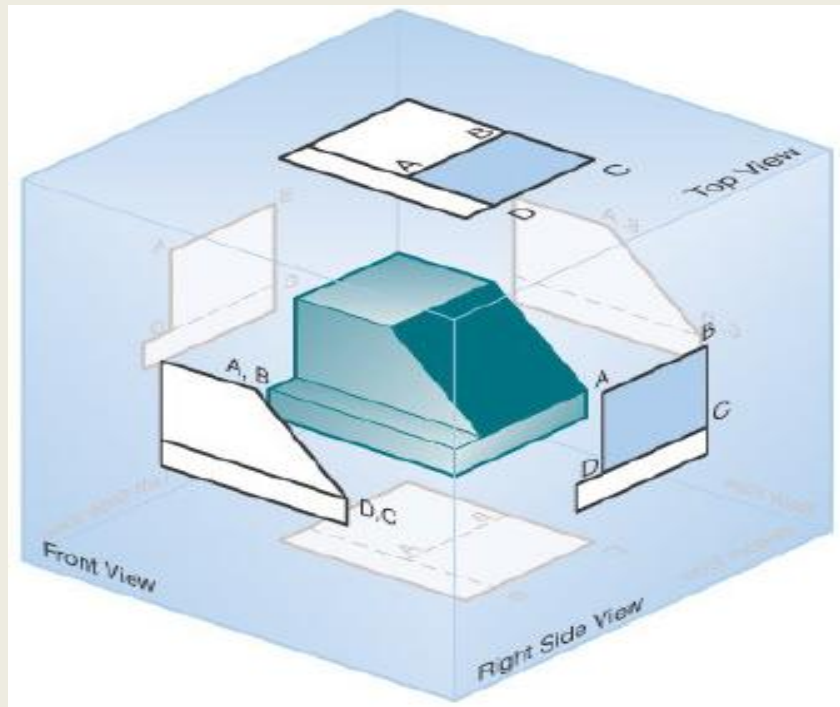
Why Auxiliary View ?

- When creating engineering drawings, it is often necessary to show features in a view where they appear **true size** so that they can be dimensioned.
- Many objects are quite complex, and the three principal views **may not best present** the geometry of the part.

Auxiliary View = additional view

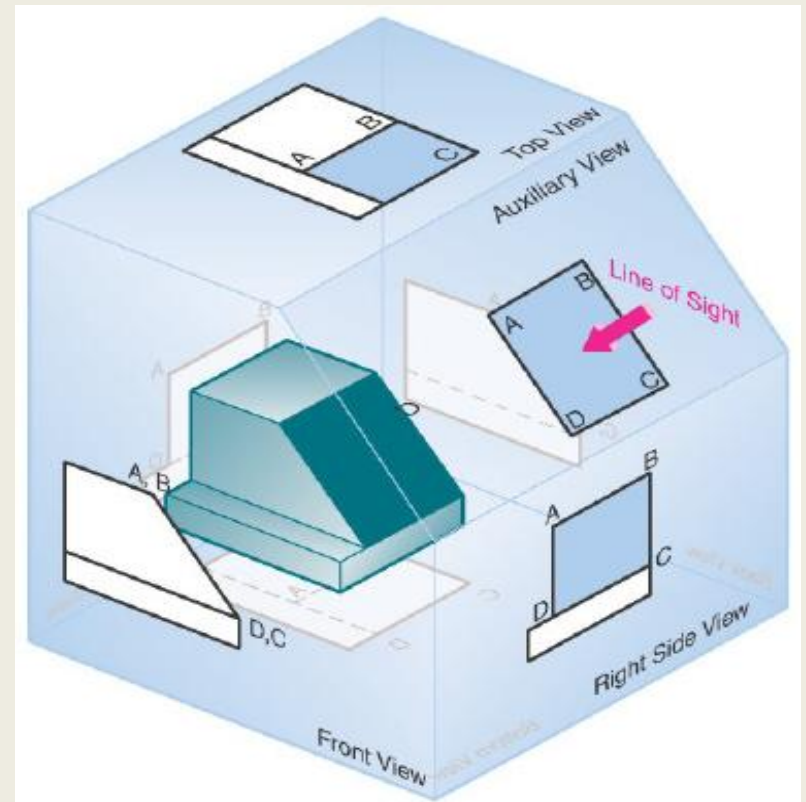
Why Auxiliary View ?

- When the glass box is unfolded, resulting in the six principal views. However, when the six views are created, **surface ABCD never appears true size and shape.**



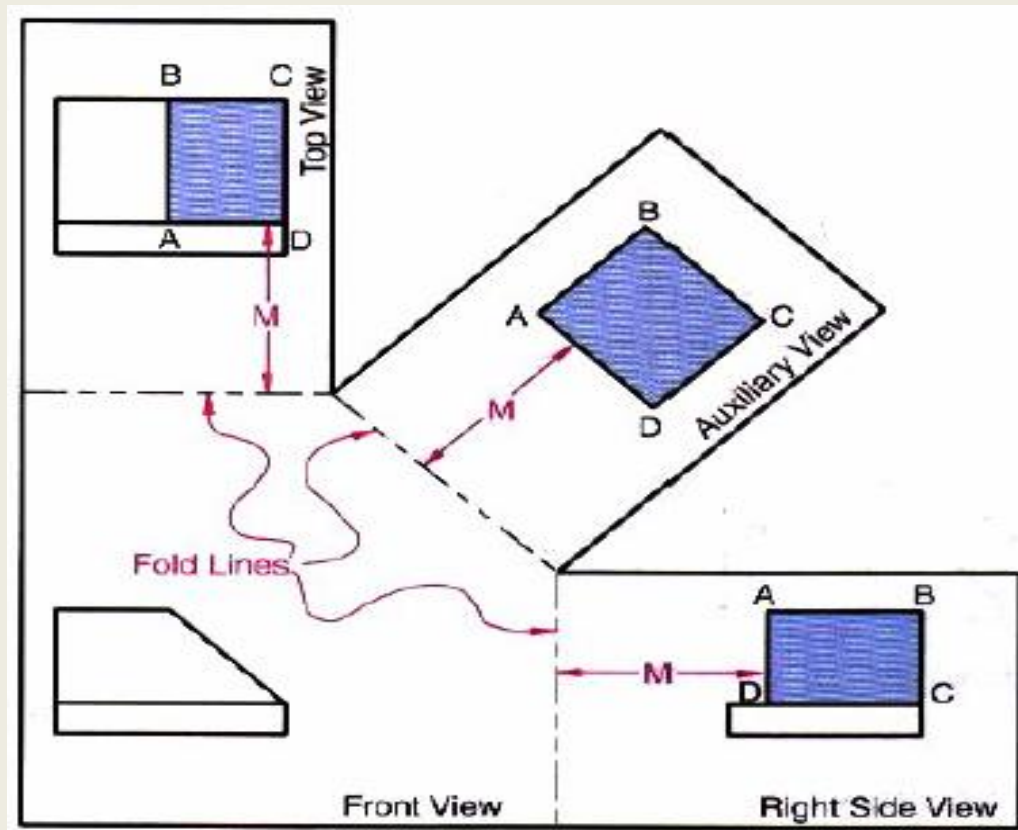
Why Auxiliary View ?

- The object suspended inside a glass box, which has a special or **auxiliary plane** that is **parallel** to inclined surface ABCD.
- The line of sight required to create the auxiliary view is **perpendicular** to the new projection plane and to surface ABCD

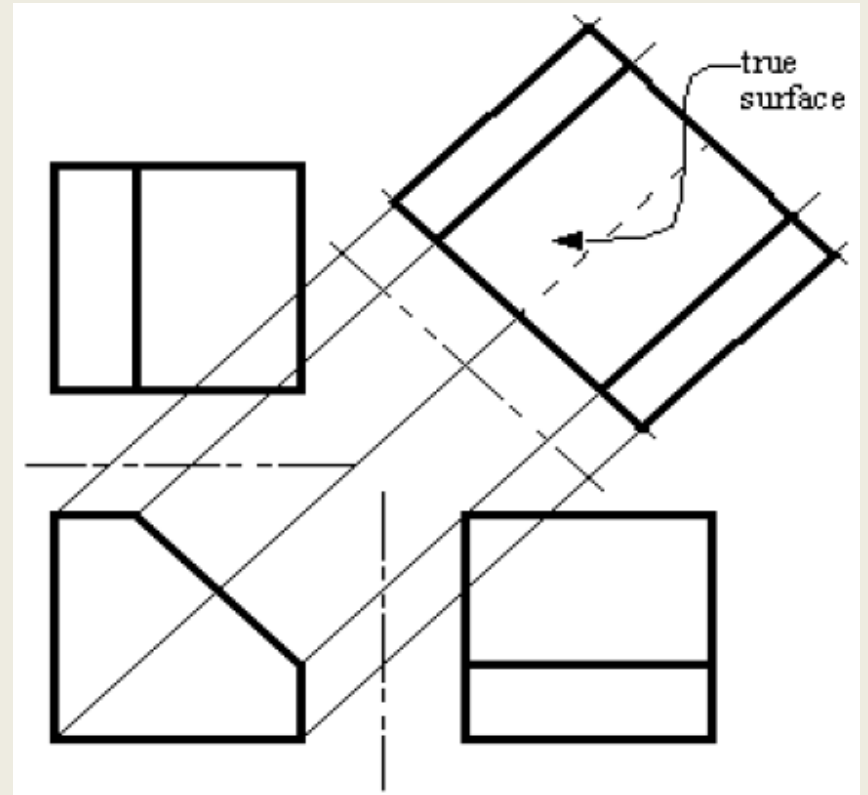
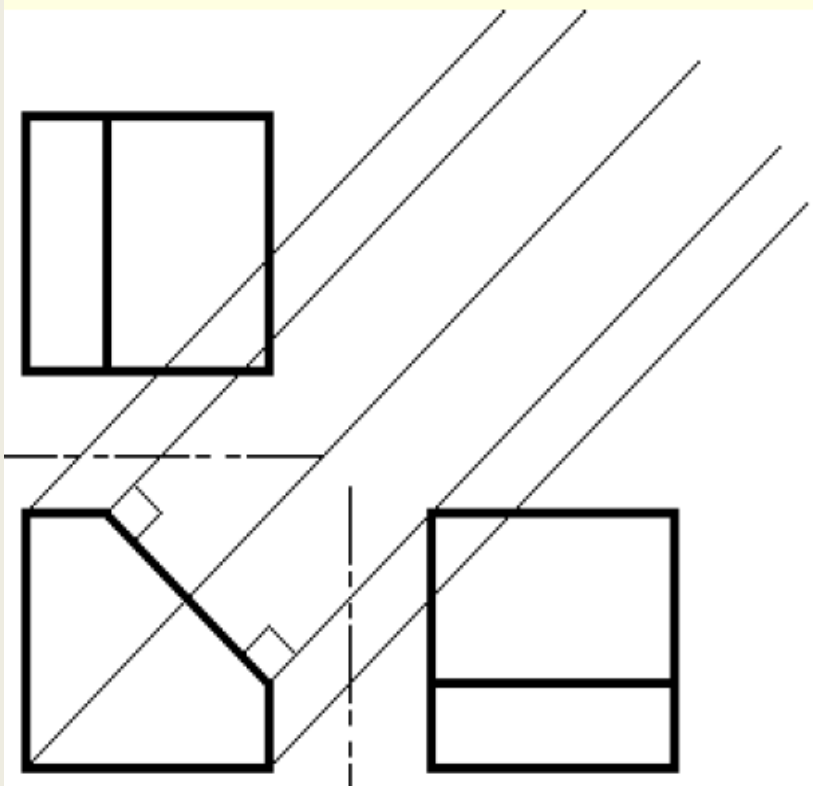


Why Auxiliary View ?

- Now, surface ABCD is shown in **true size and shape** and is located at distance M from the fold line.



How to Draw

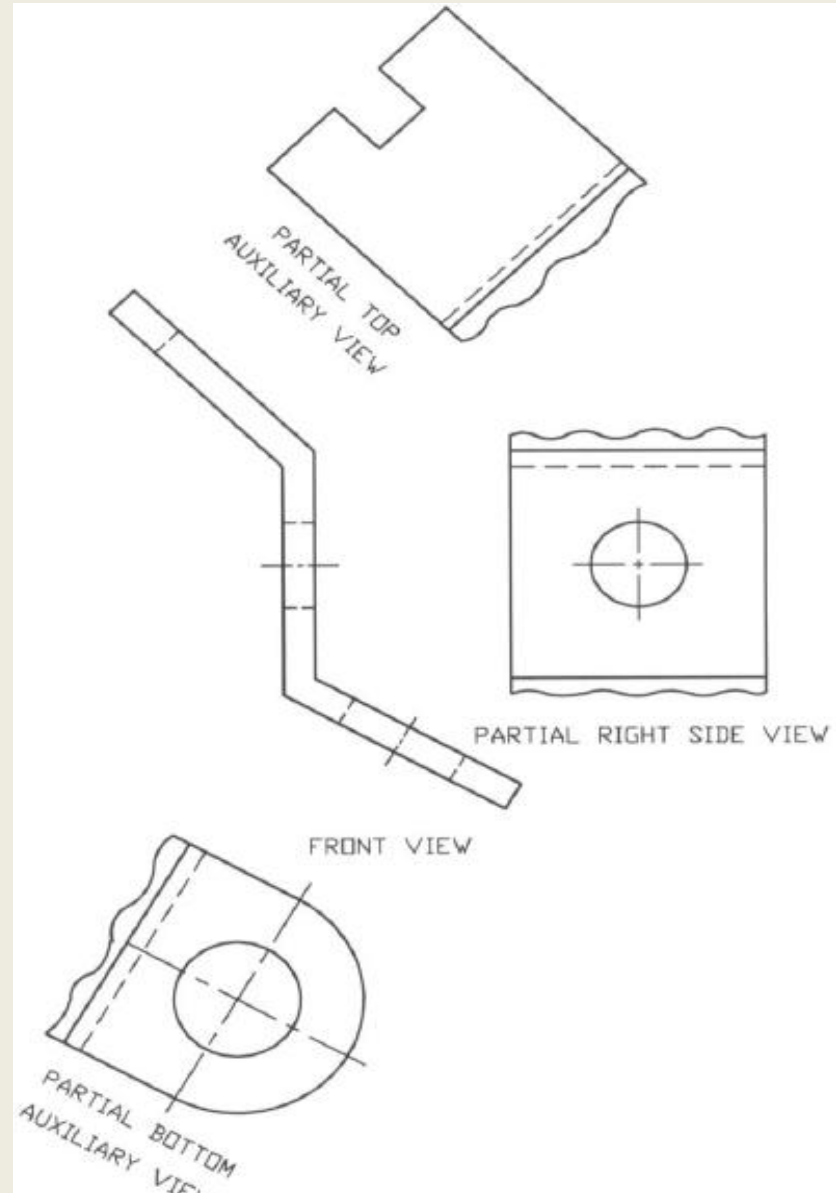
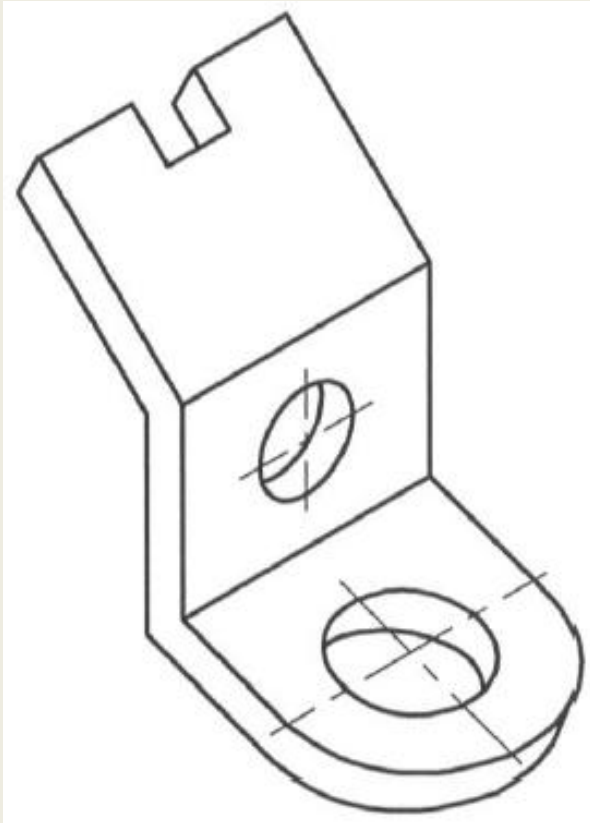


Partial auxiliary view

- In auxiliary views, it is normal practice not to project hidden features or other features that are not part of the inclined surface. When **only the details for the inclined surface are projected and drawn** in the auxiliary view, the view is called a partial auxiliary view.

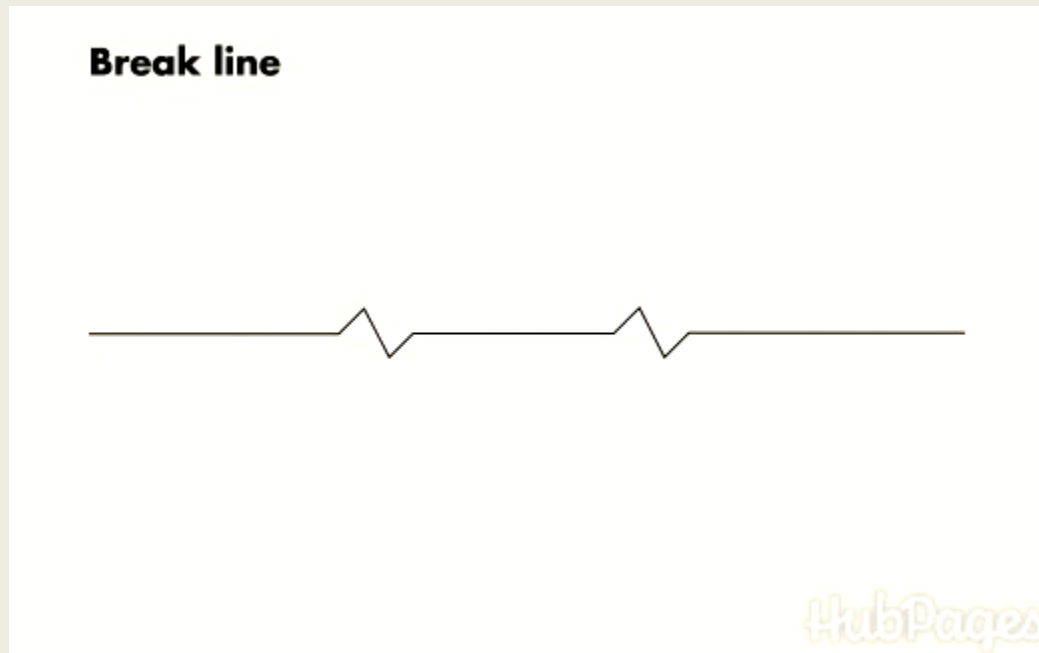
Let's see an example !

Partial auxiliary view



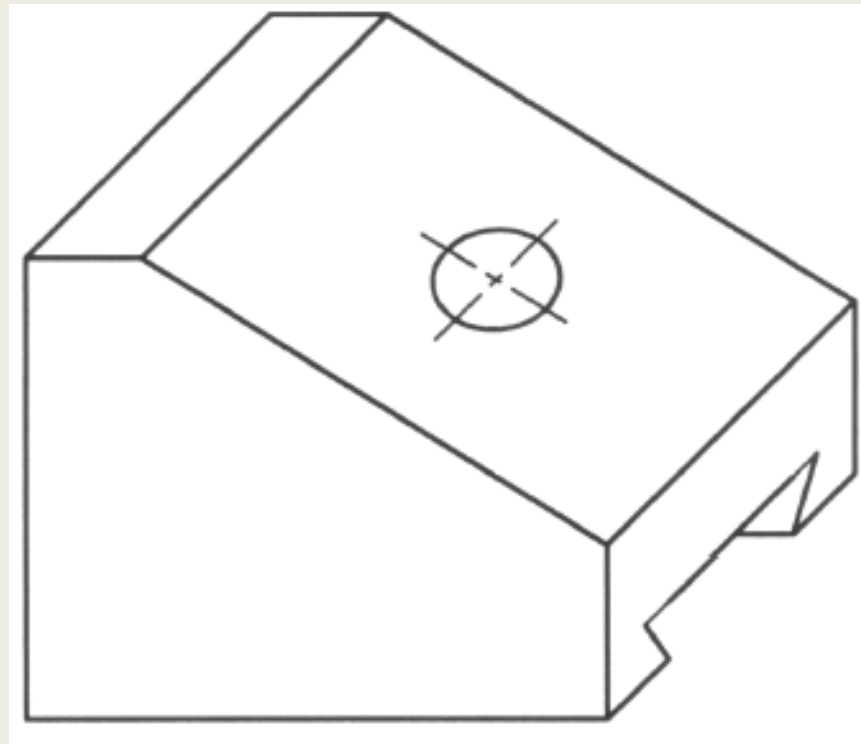
Partial auxiliary view

- **Break line** : To show a break on the object. It shortens the view of a long part.



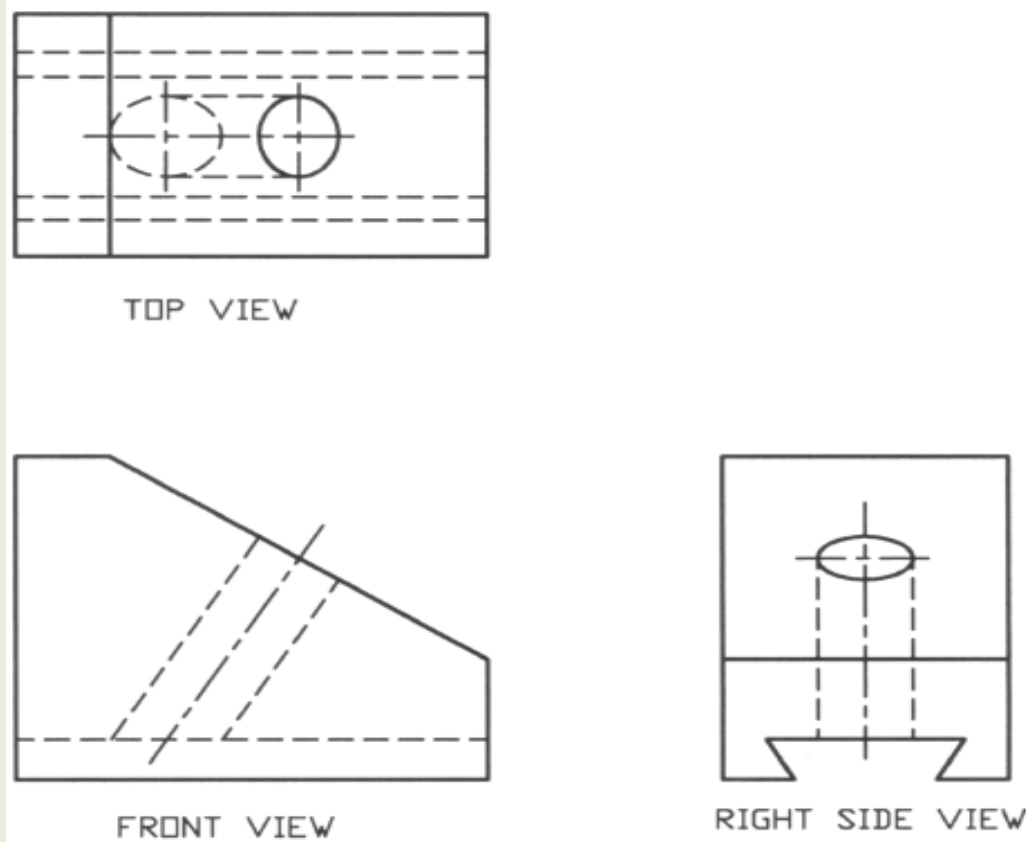
Auxiliary view (with circular feature)

- Object with **Inclined** Surface Containing a **Hole**



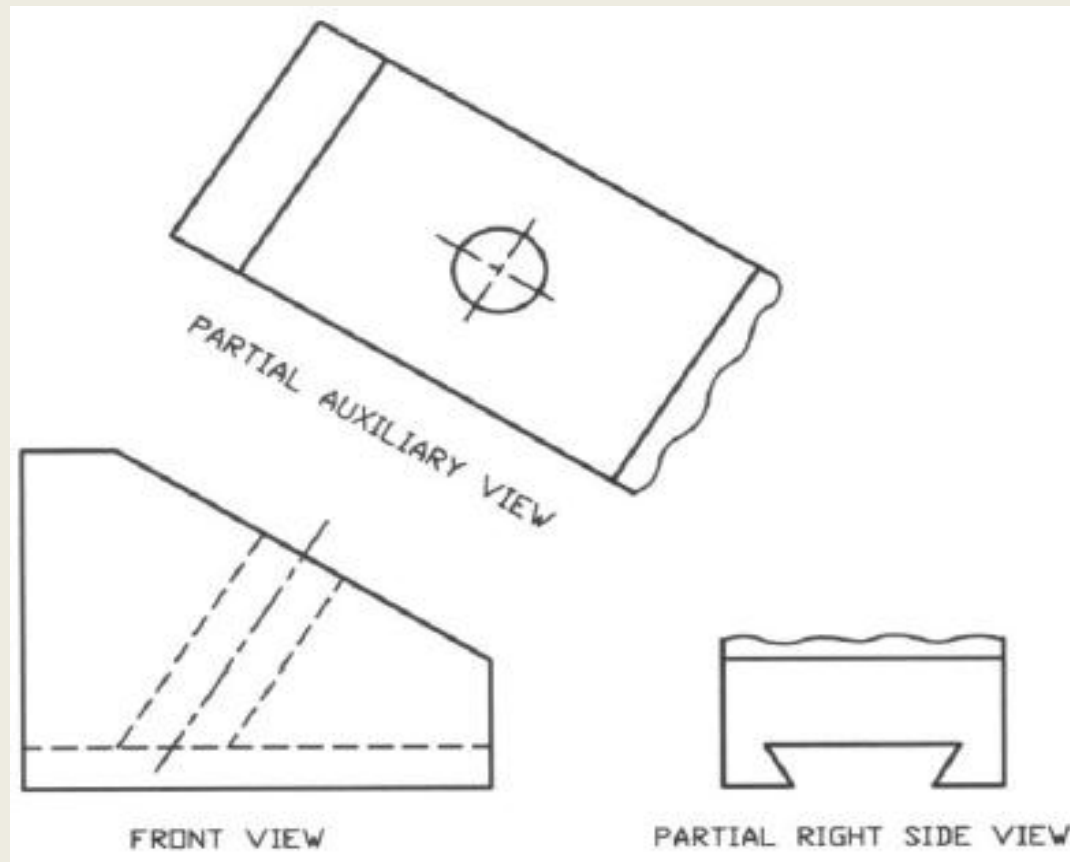
Auxiliary view (with circular feature)

- Regular Orthographic Views will create a problem – circle will be **elliptic**



Auxiliary view (with circular feature)

- Partial Auxiliary Views :



Lines

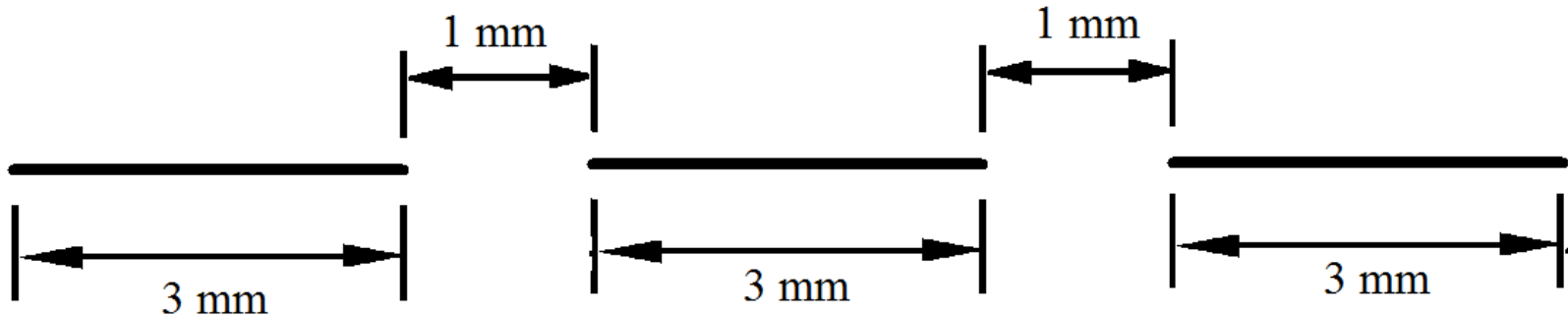
- Object Line : 100% thick
- Hidden Line: 50% thick
- Dimension, Extension Line: 25% thick
- Center Line : 50% thick
- Cutting Plane Line : 125% thick
- Hatchet line :25% thick
- Break line : 25% thick

Object Line

Thickness: 100 %

Hidden Line

Thickness: 50 %



Center Line

Thickness: 50 %

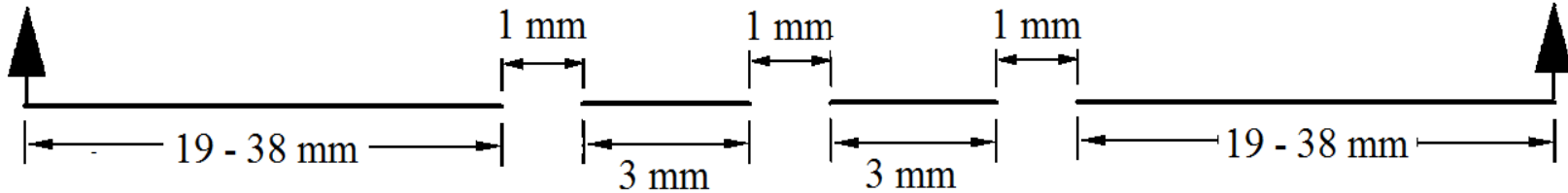
Dimension and
Extension Lines

Light
3.000

Thickness: 25 %

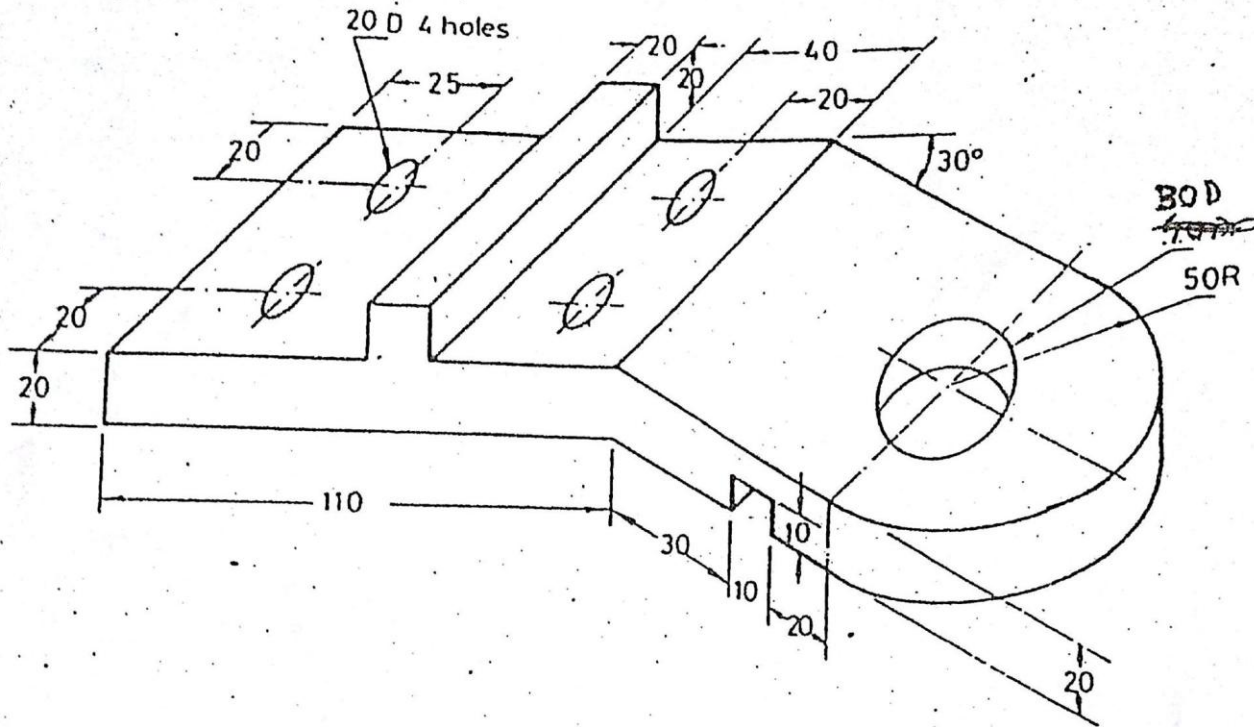
Thickness: 125 %

Section Line



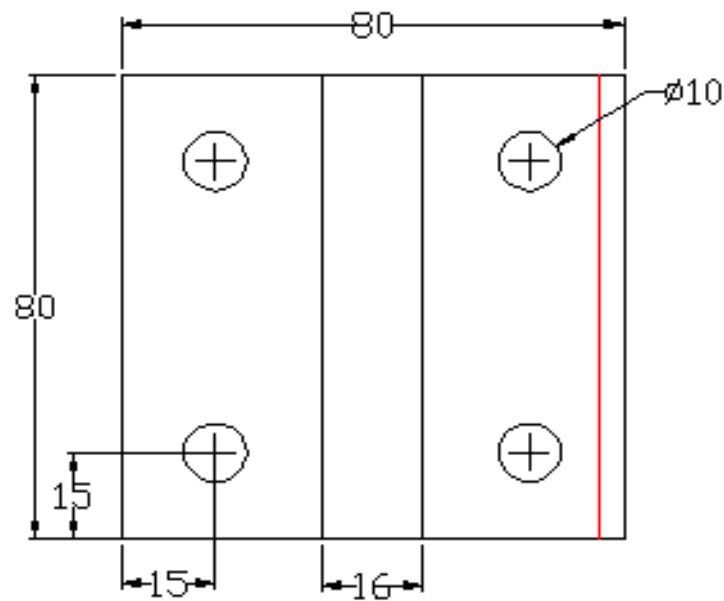
N.B.: All Percentages are with respect to the object line

First Problem

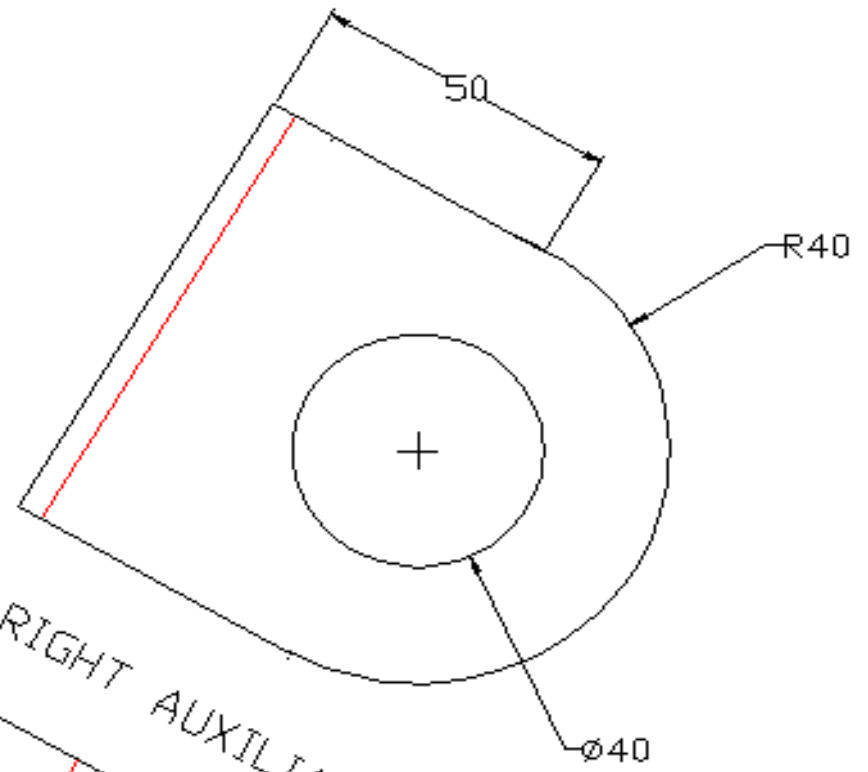


DRAW PARTIAL TOP, RIGHT AUXILIARY AND FRONT VIEW

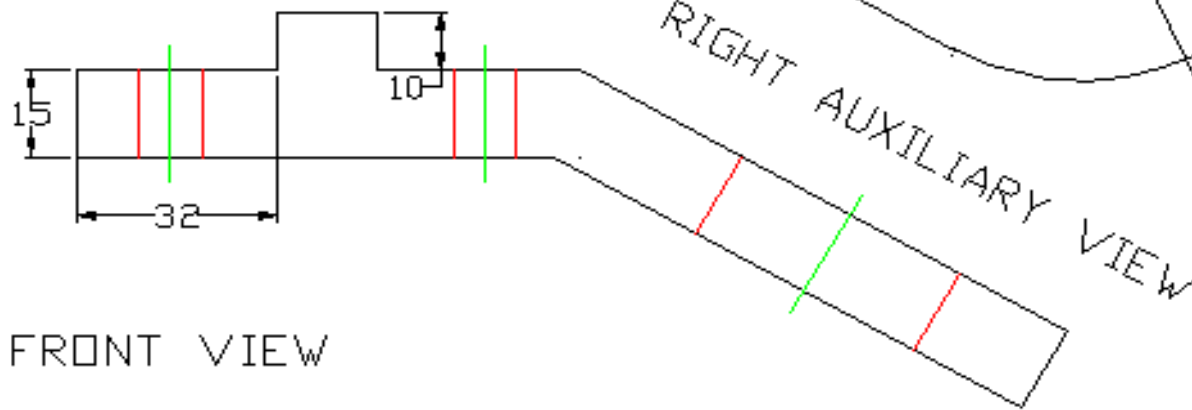
First Problem



— CENTER LINE
— HIDDEN LINE



PARTIAL TOP VIEW



FRONT VIEW

Persist Until Succeed !!!