



ME 160: Mechanical Engineering Drawing-I



Introduction



- Drawing is a graphic language
- Drawing is the language of engineers



Basic Views

In general, there are 2 types of views

- 2 dimensional views
 - Orthographic View
- 3 dimensional views
 - Dimetric View
 - Trimetric View
 - Isometric View



Orthographic Views and Isometric Views will be of our main interest in this course.

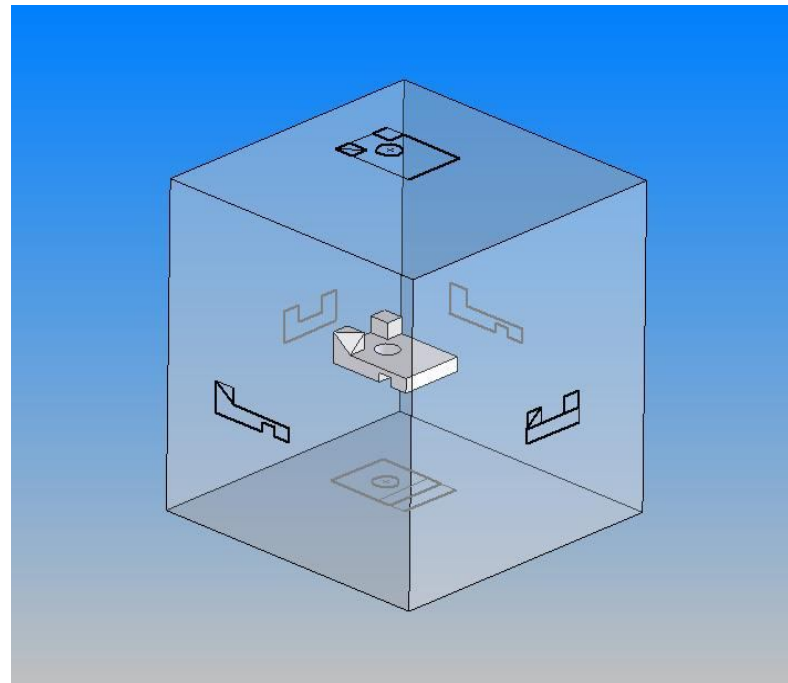


Views of a Solid



A solid object has **6** sides.

Six Orthographic Views can be drawn from six sides.

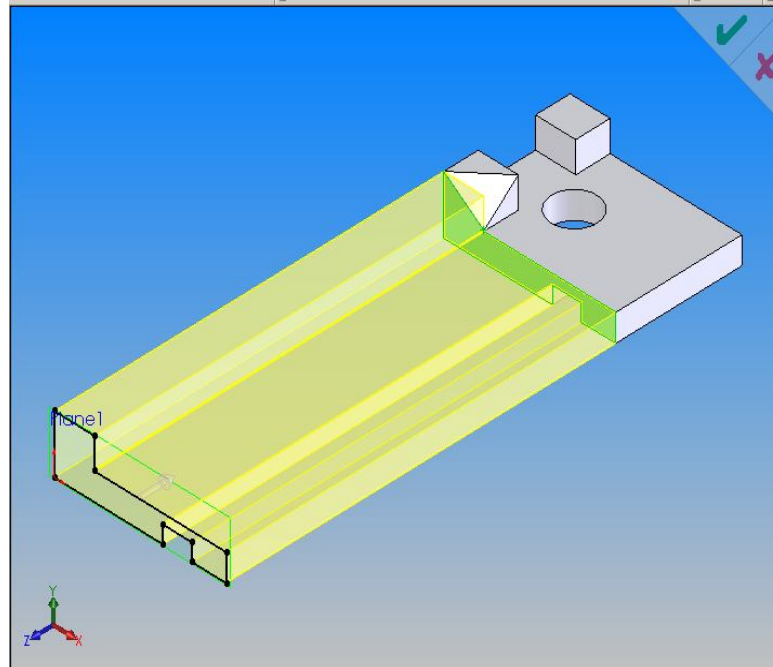




Projected Views on a Plane



Orthographic Views are generated by projecting the edges of a solid on a plane.



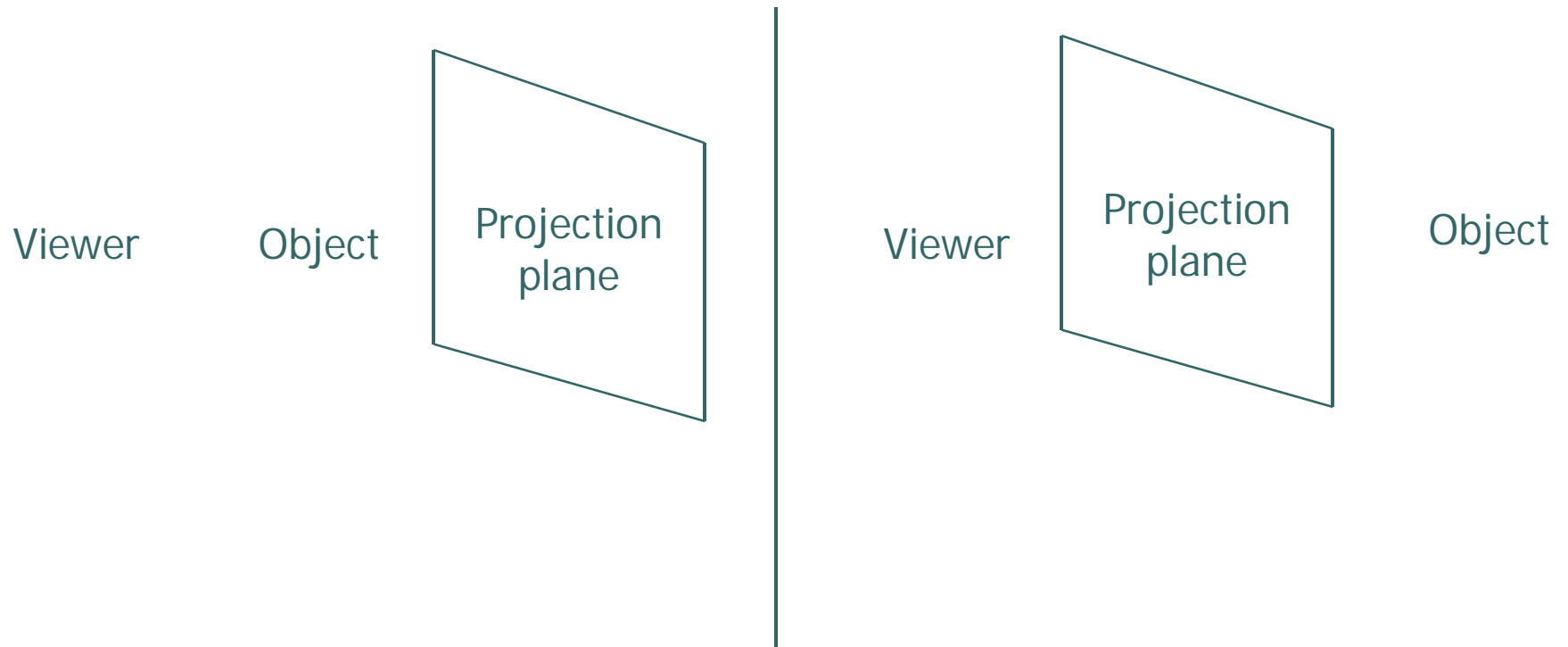


Types of Projection

There are 2 types of projection

First angle projection

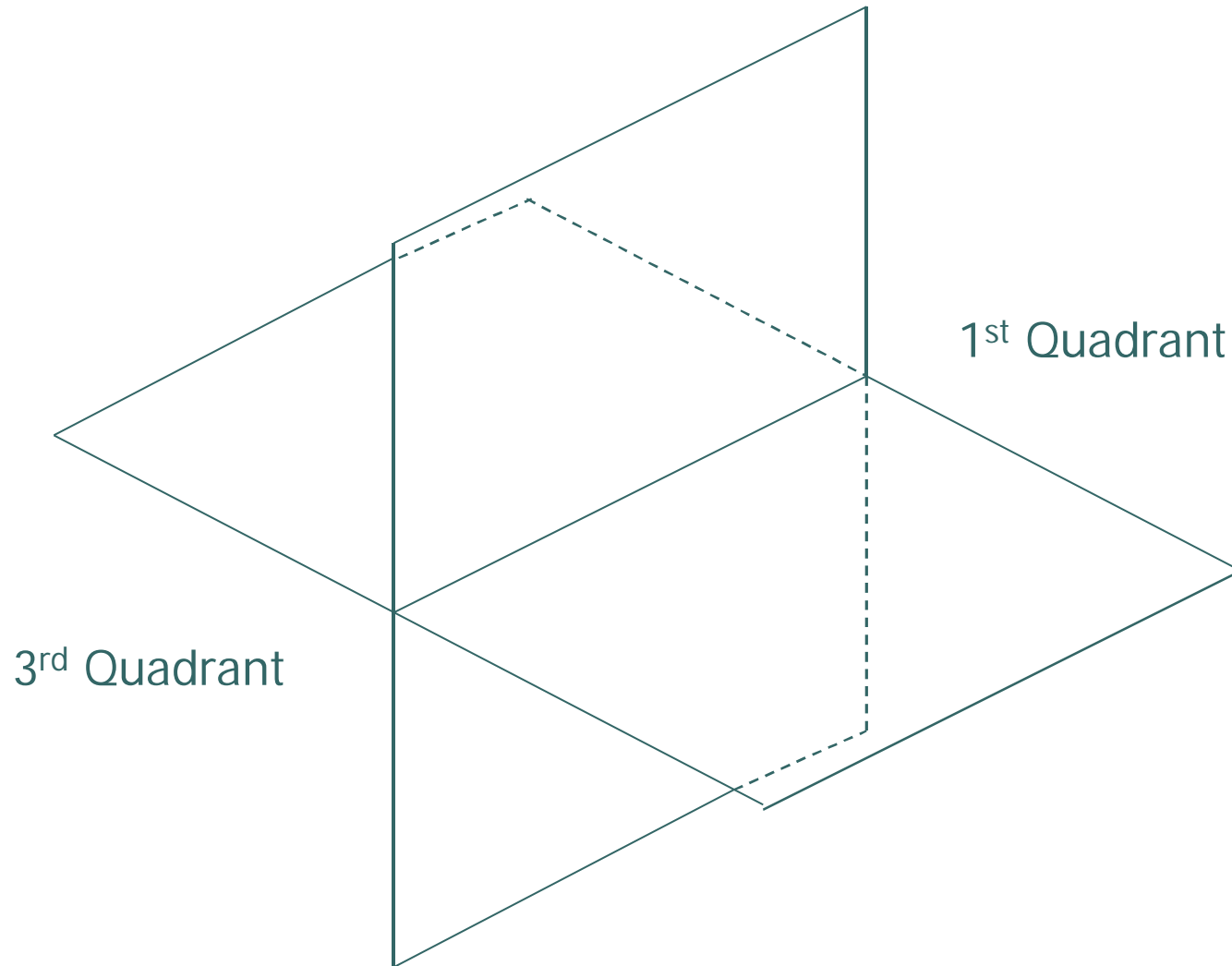
Third angle projection



Relative position of viewer, object and projection plane

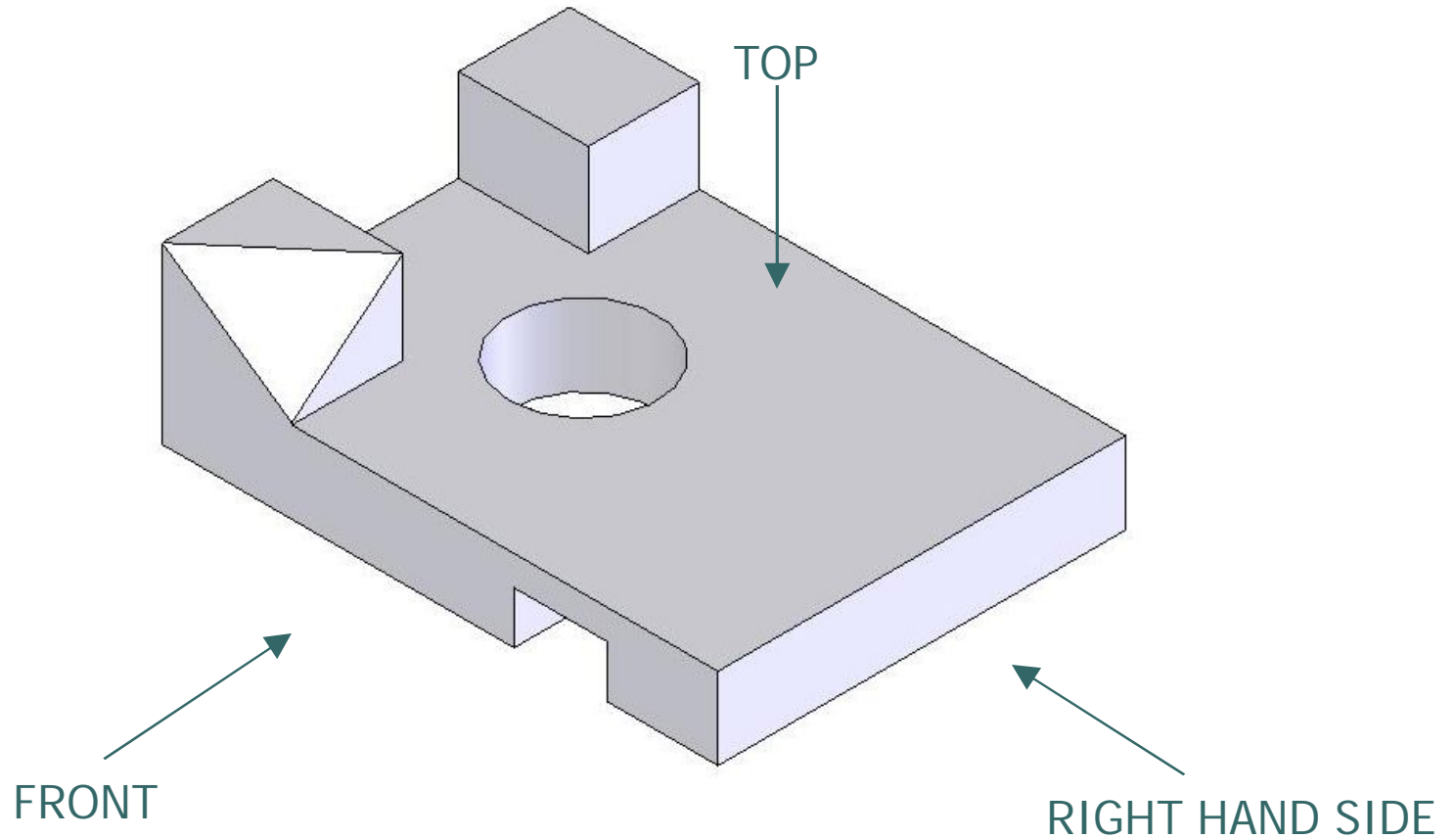


Formation of Quadrants





A Solid Block

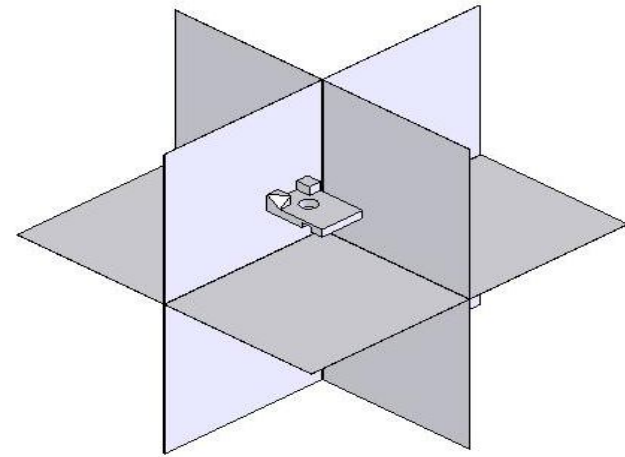


Whichever projection system we follow, views will be drawn for the sides that are visible to us.

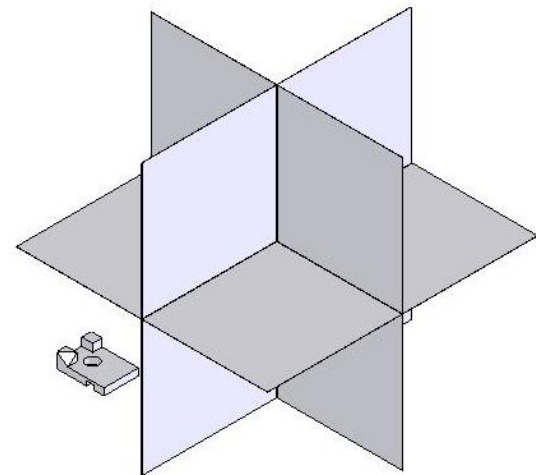


Placement of Solid

First Angle Projection

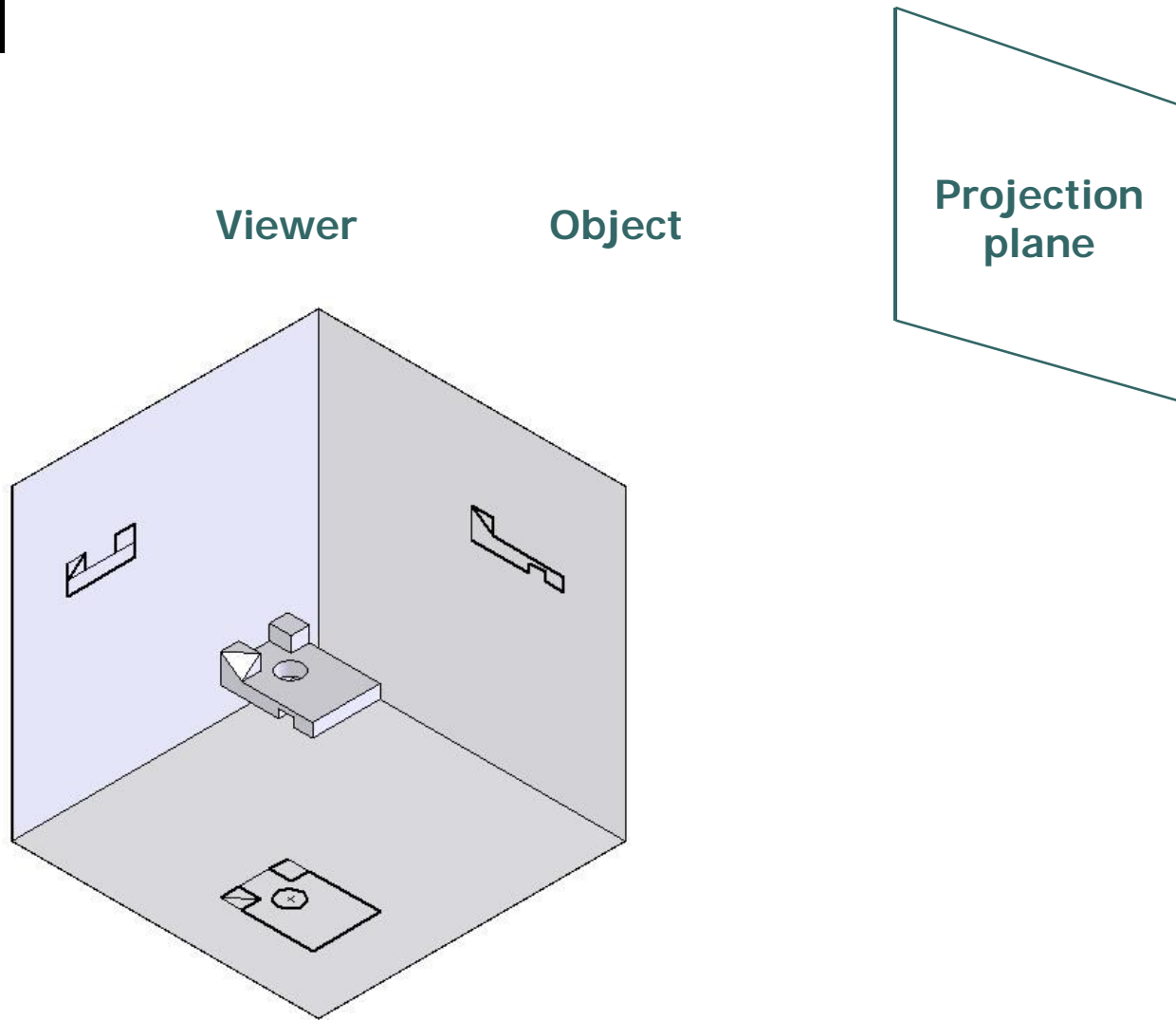


Third Angle Projection



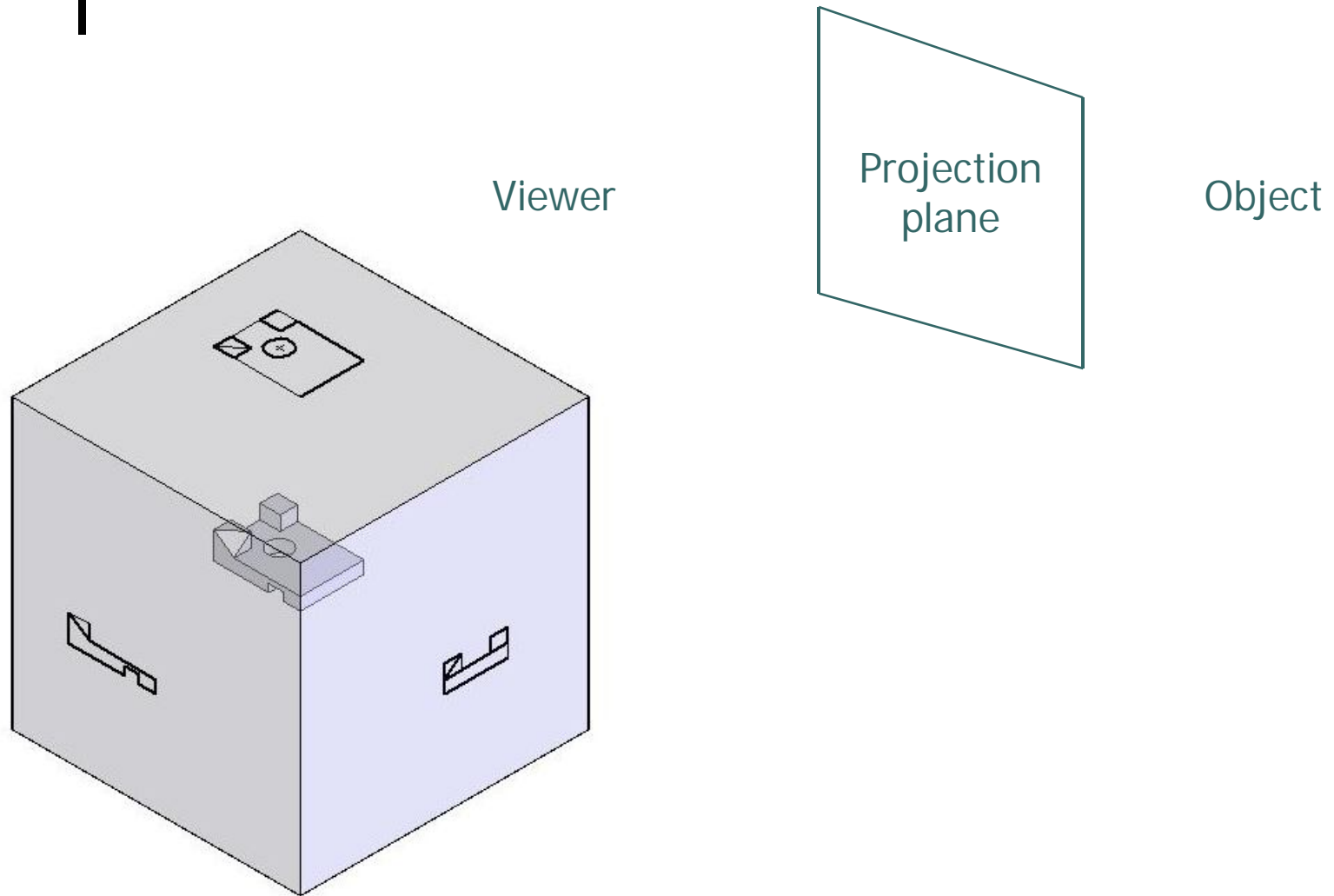


First Angle Projection



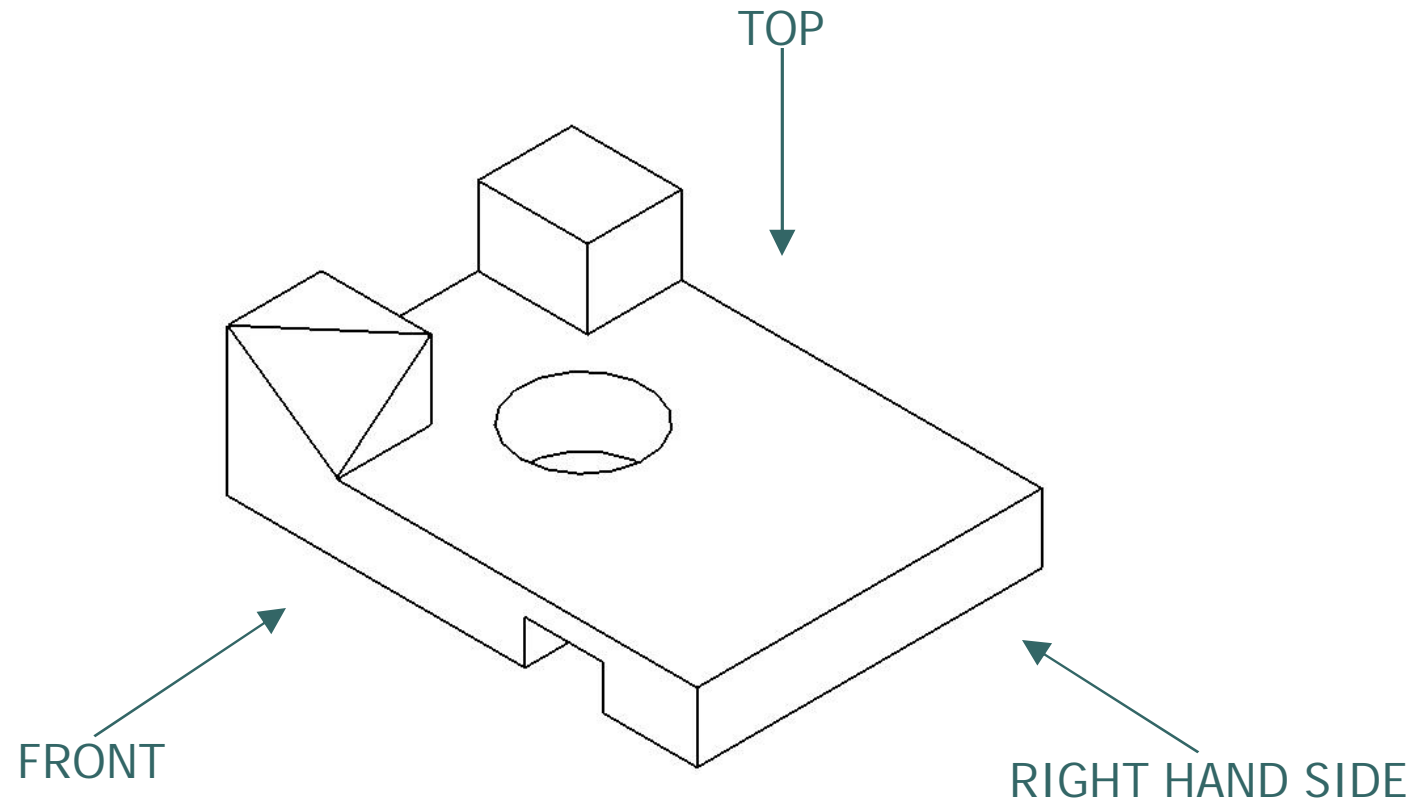


Third Angle Projection





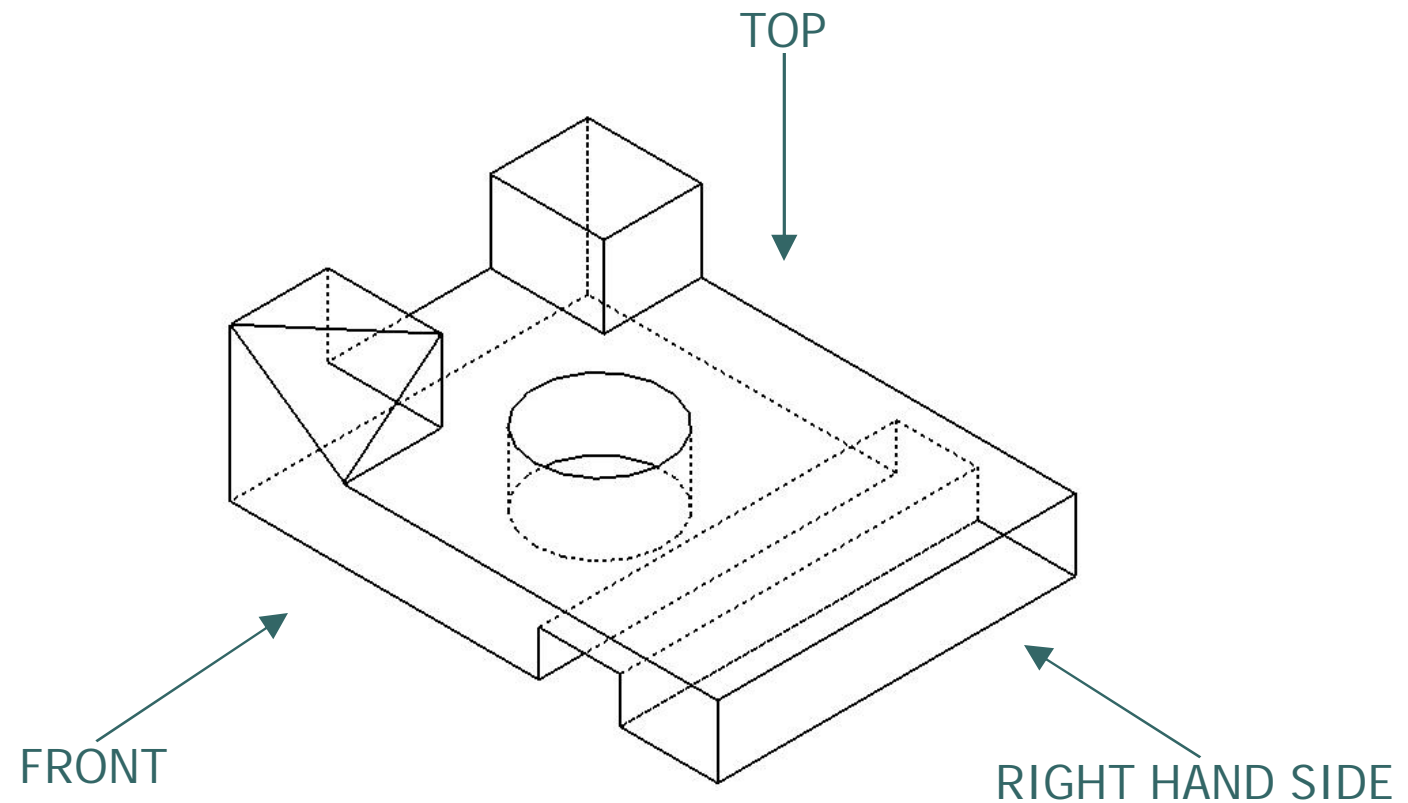
Solid Block Observation



Whichever projection system we follow, views will be drawn for the sides that are visible to us.



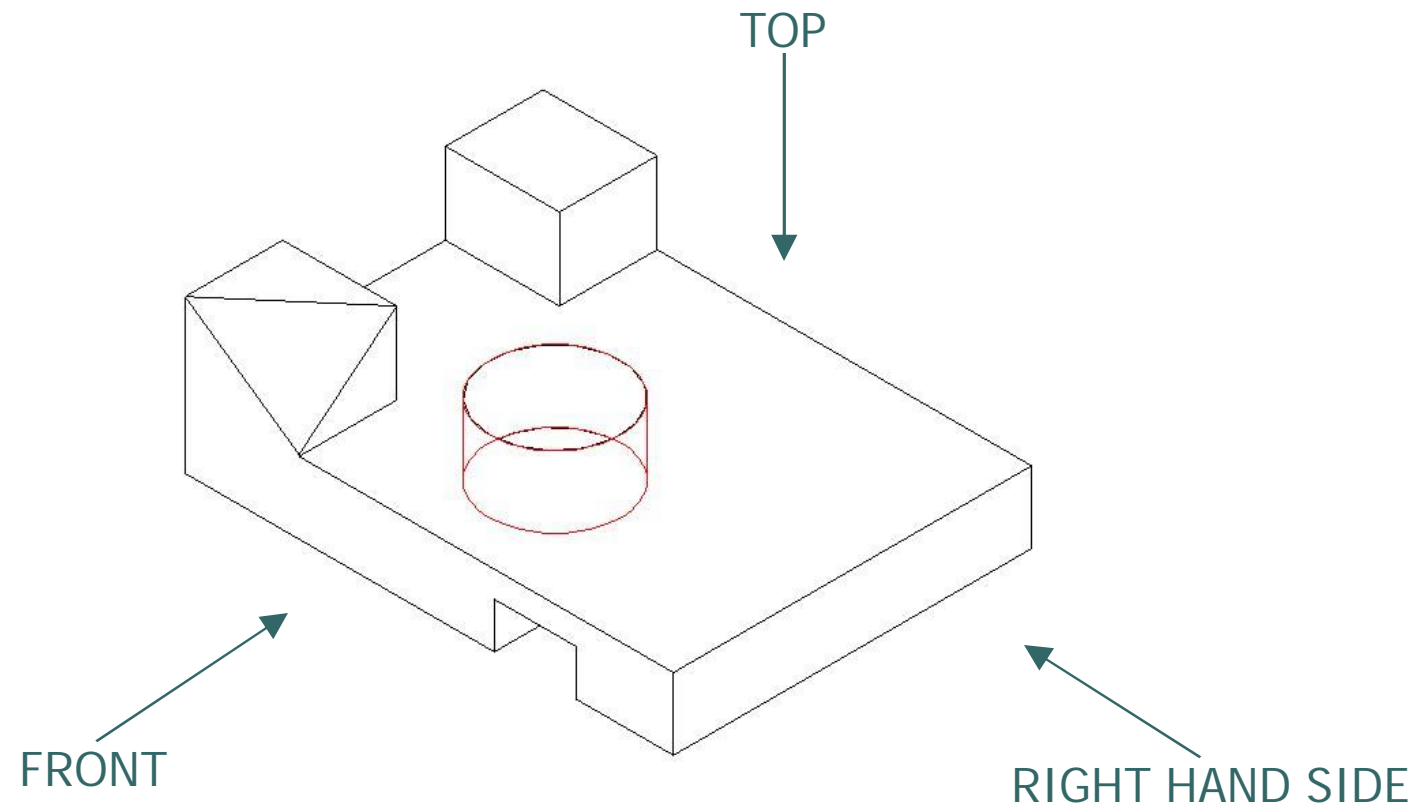
Solid Block Observation



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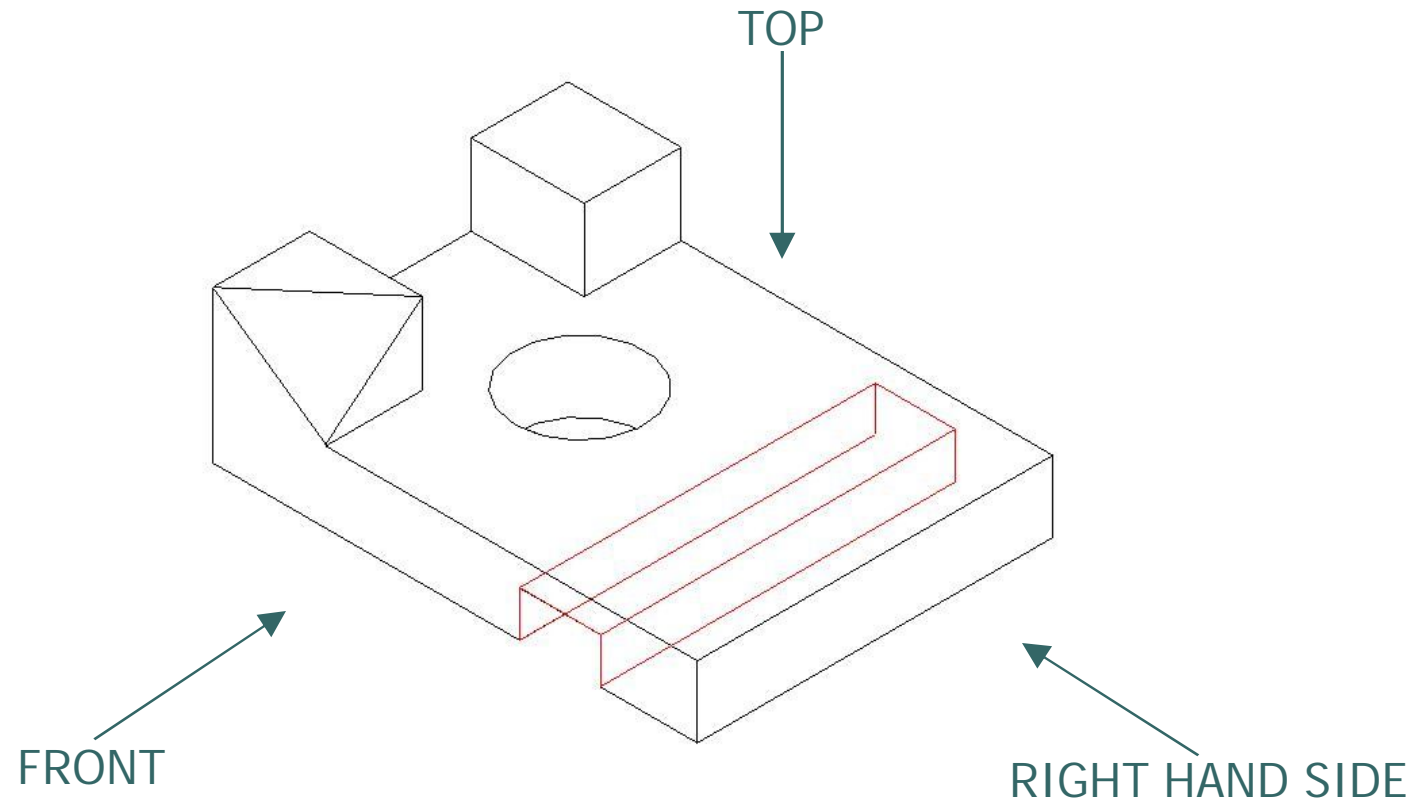
Solid Block Observation



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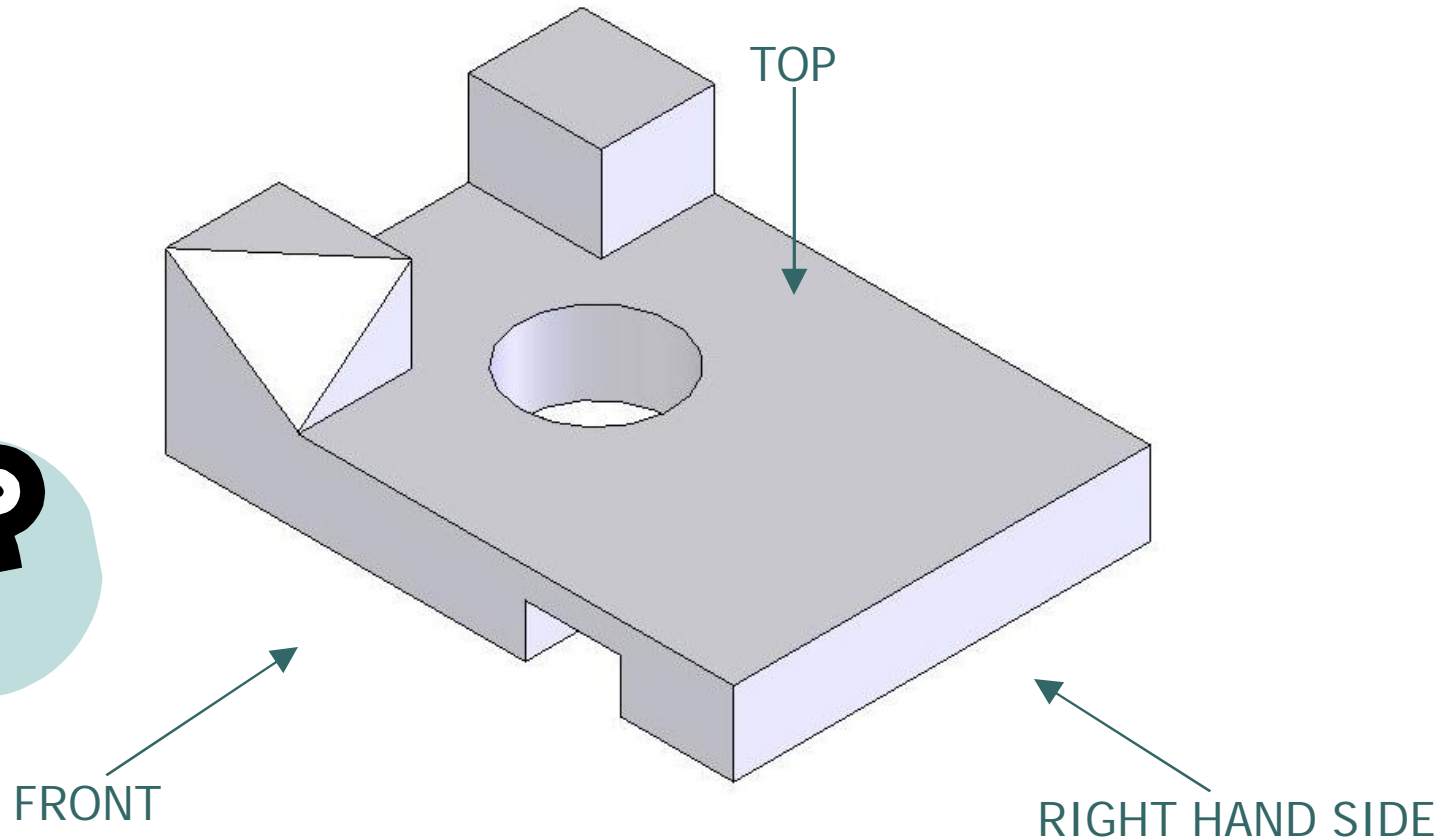
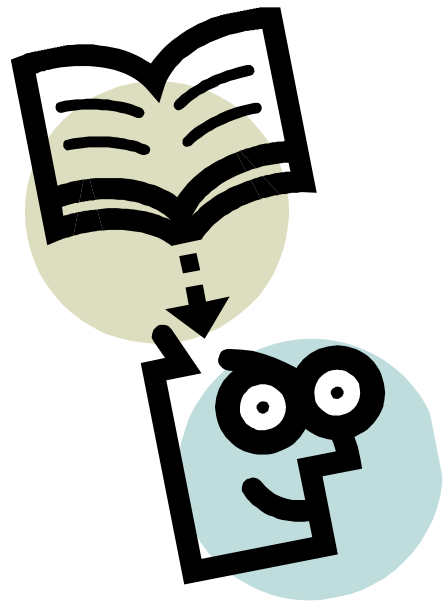
Solid Block Observation



Whichever projection system we follow, views will be drawn for the sides that are visible to us.



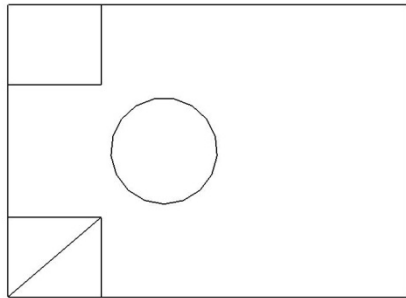
Development of Views



Whichever projection system we follow, views will be drawn for the sides that are visible to us.



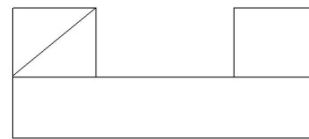
Development of Views



TOP VIEW



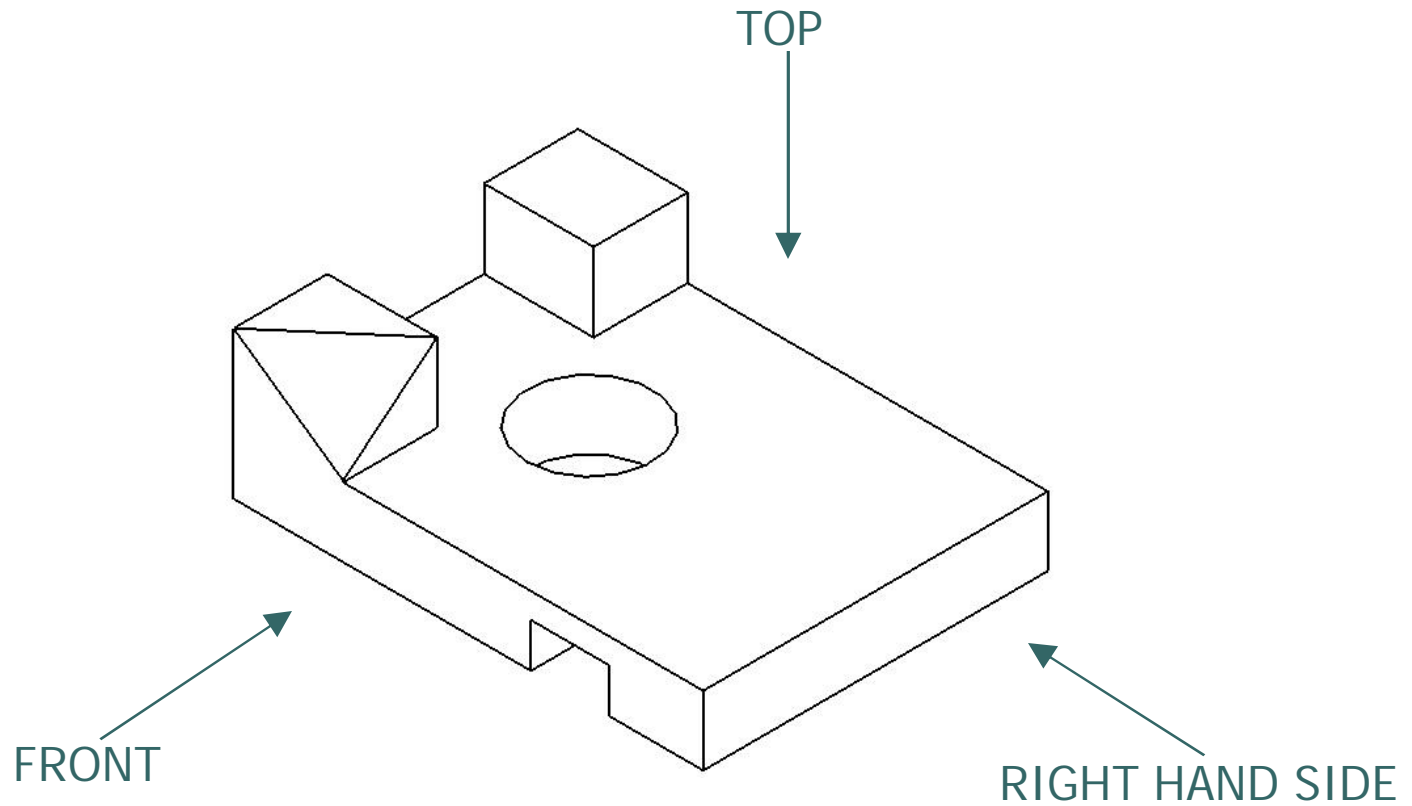
FRONT VIEW



RHS VIEW



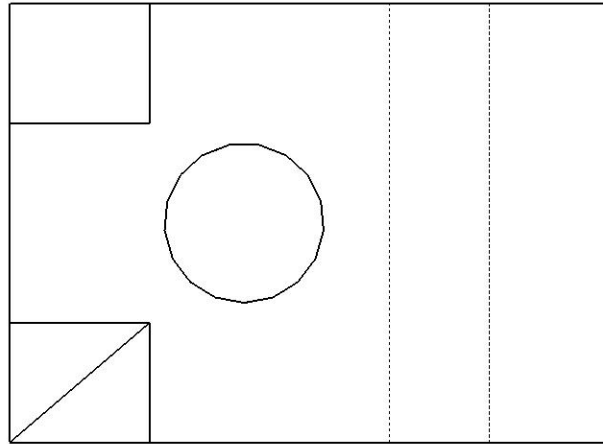
Development of Views



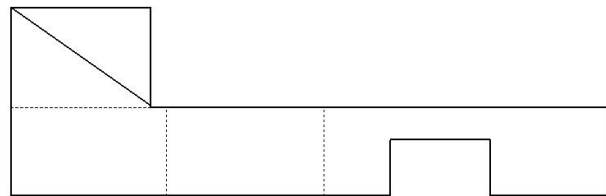
Whichever projection system we follow, views will be drawn for the sides that are visible to us.



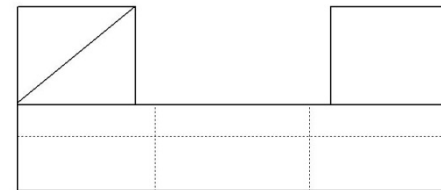
Development of Views



TOP VIEW



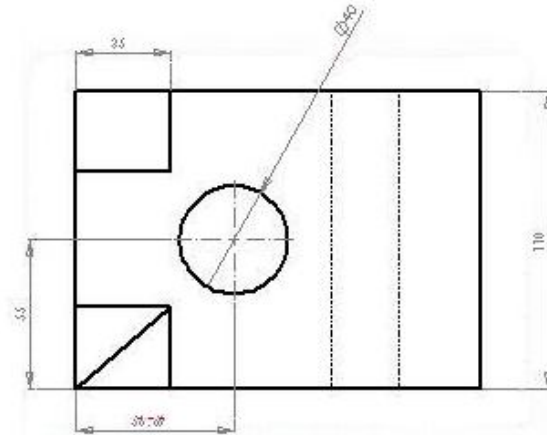
FRONT VIEW



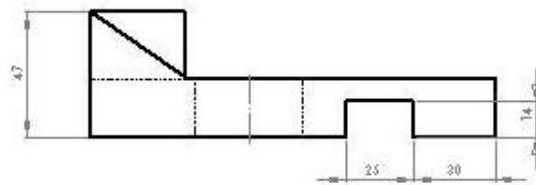
RHS VIEW



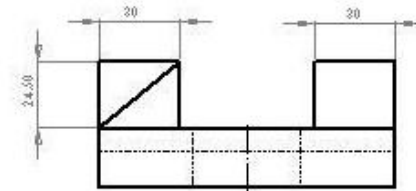
Development of Views



TOP VIEW



FRONT VIEW





RHS VIEW



Different types of lines

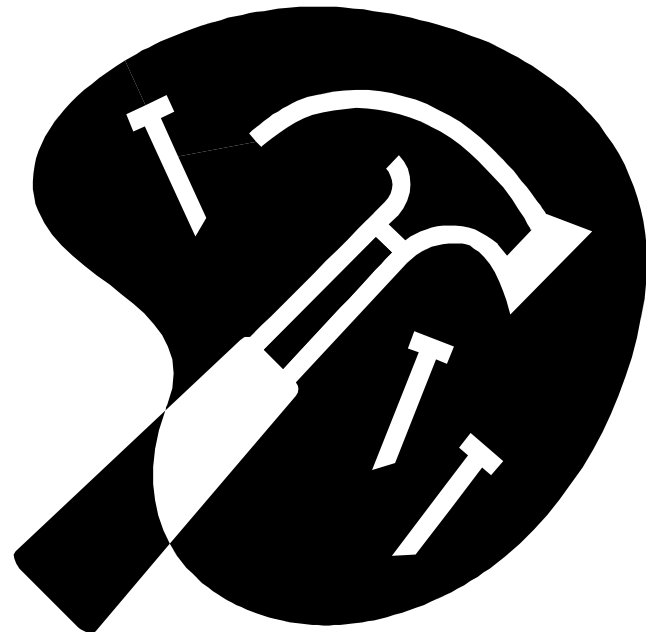
(Different line thickness for different types of lines)

-  Object line
-  Hidden line
-  Center line
-  Cutting plane line

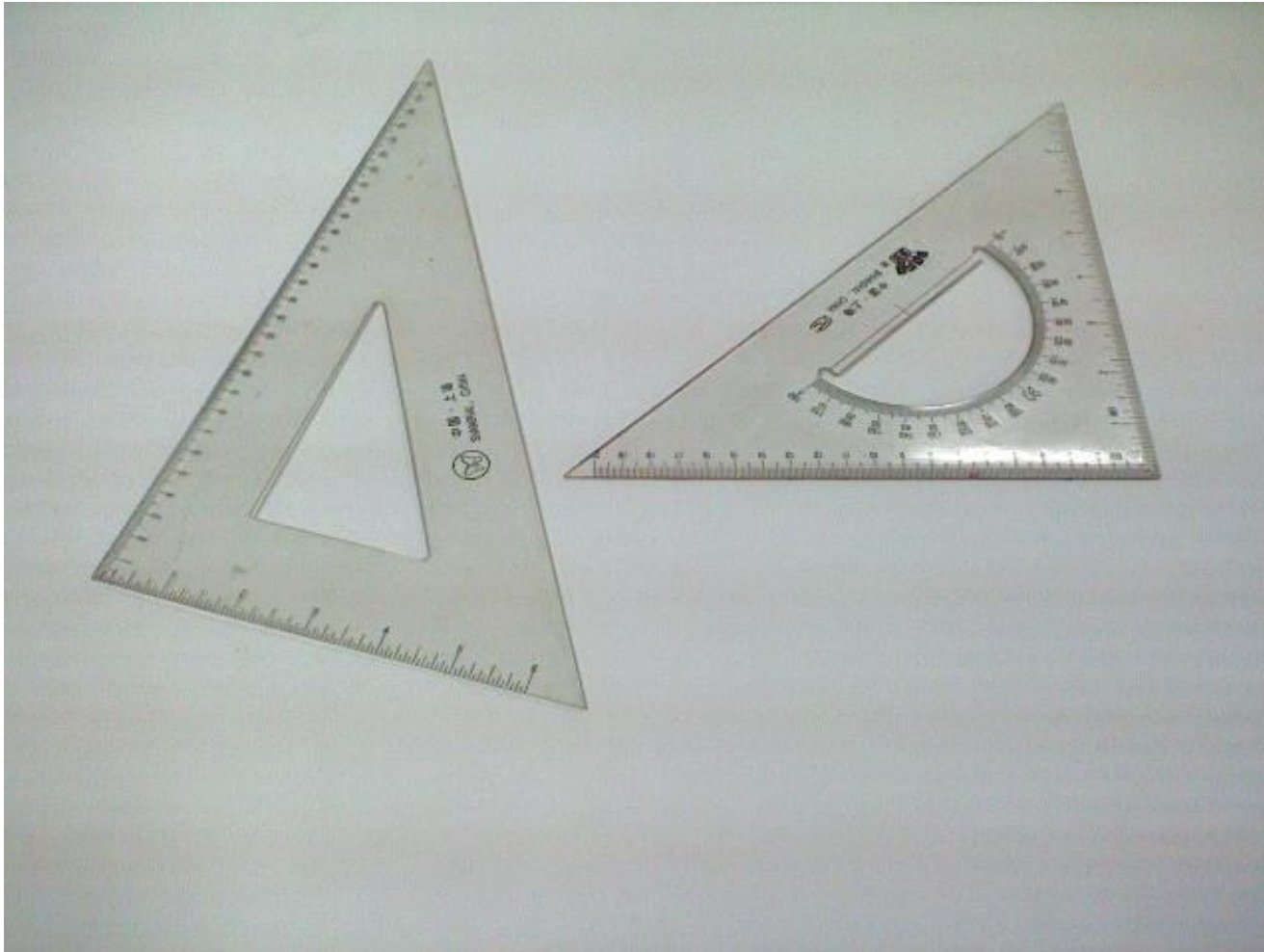


Instruments

- Drawing board/table
- Drawing sheet
- Drafting tape
- T-square
- Set square
- Compass and divider
- Pencil (HB, 2B)
- Eraser



● ● ● | **Set-Squares**





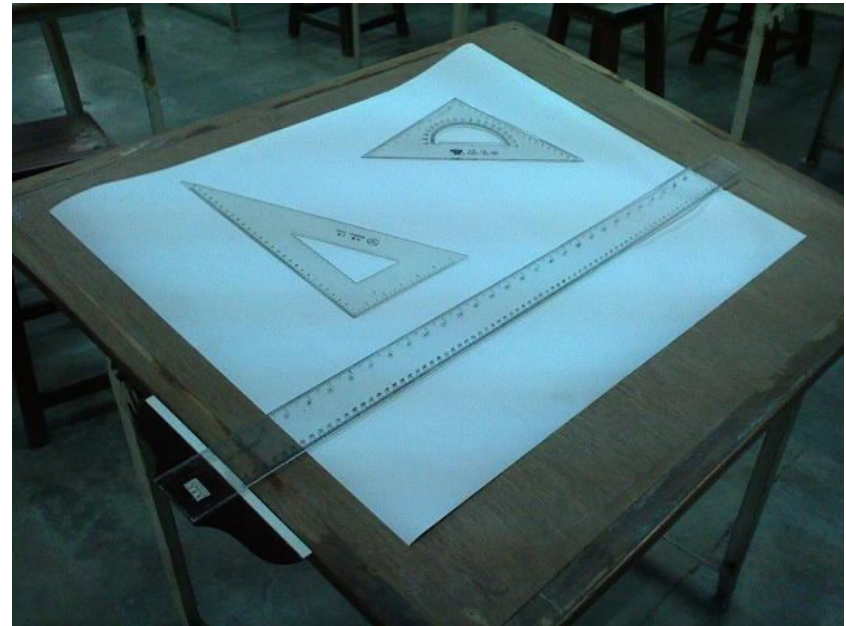
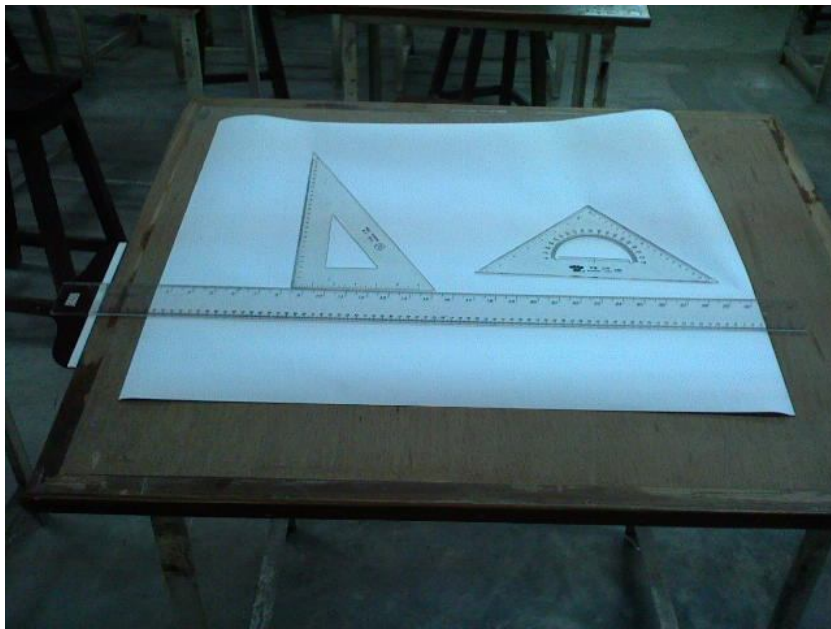
Compass and Divider

To draw circles and round edges Compass and Divider will be used



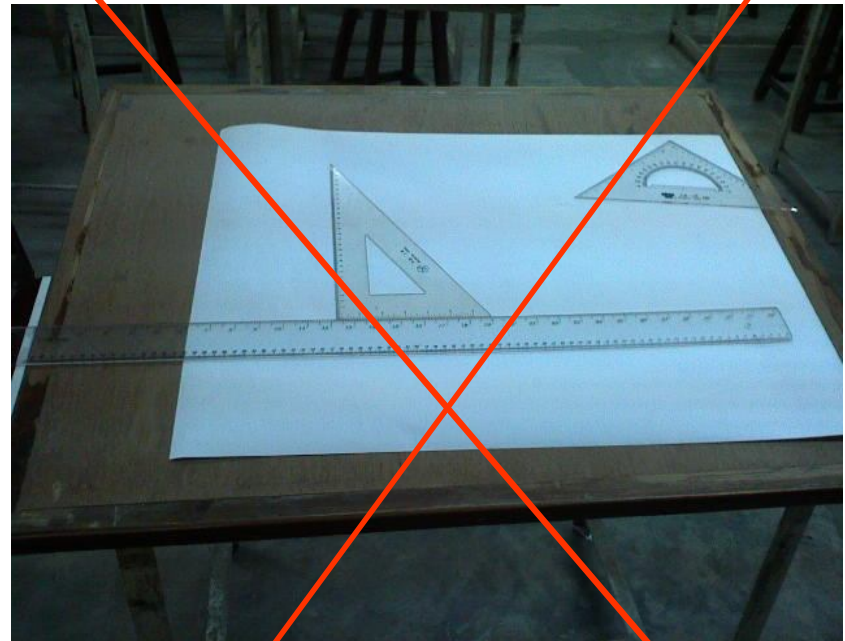
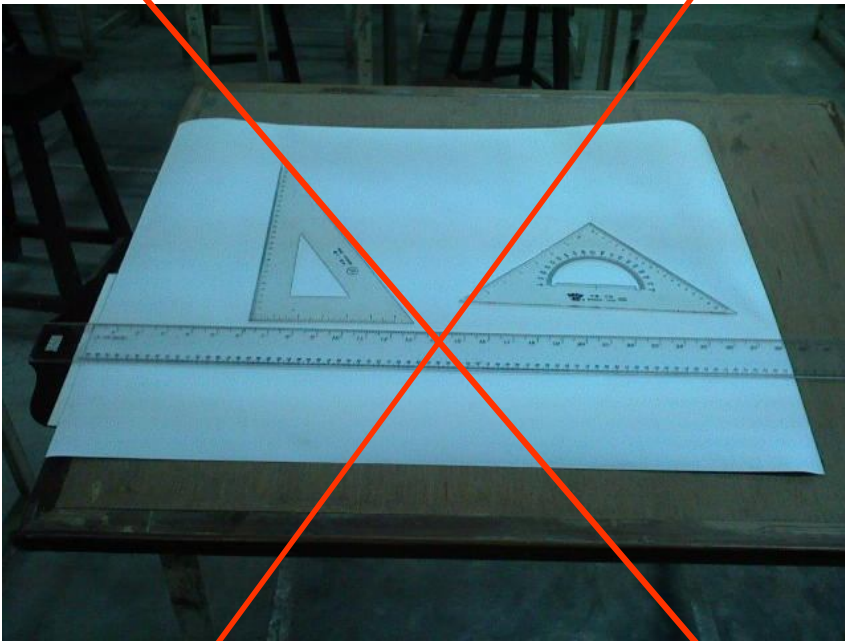
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Preparing Drawing Table



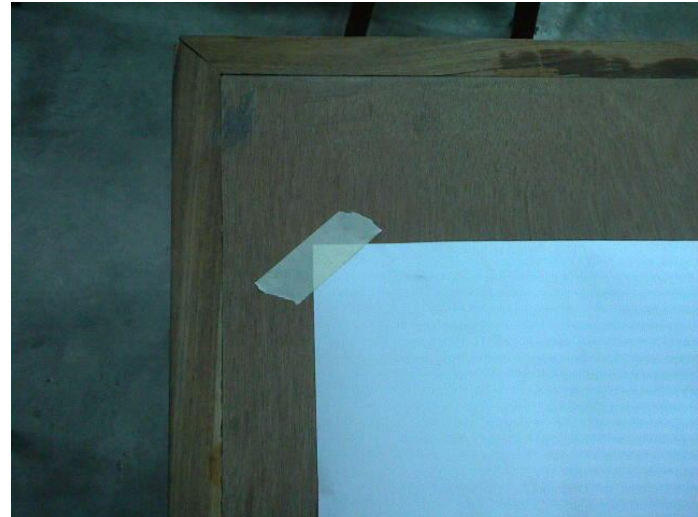


Preparing Drawing Table



● ● ● | Preparing Drawing Table

Affix 4 corners of the drawing sheet like this



With the help of drafting tape





Use of Set-squares and T-Square

Draw a horizontal line

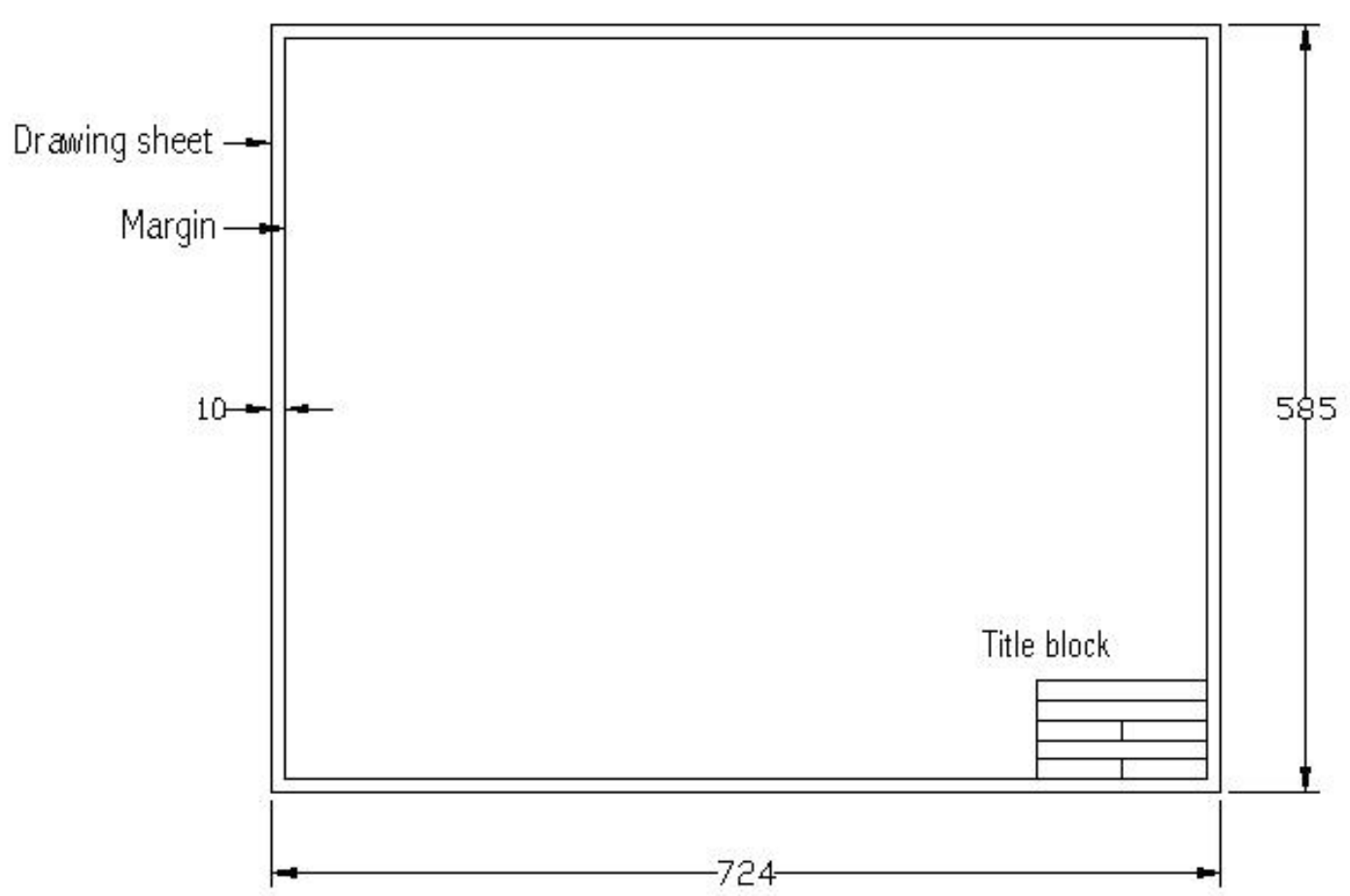
Draw a vertical line

Draw Parallel lines

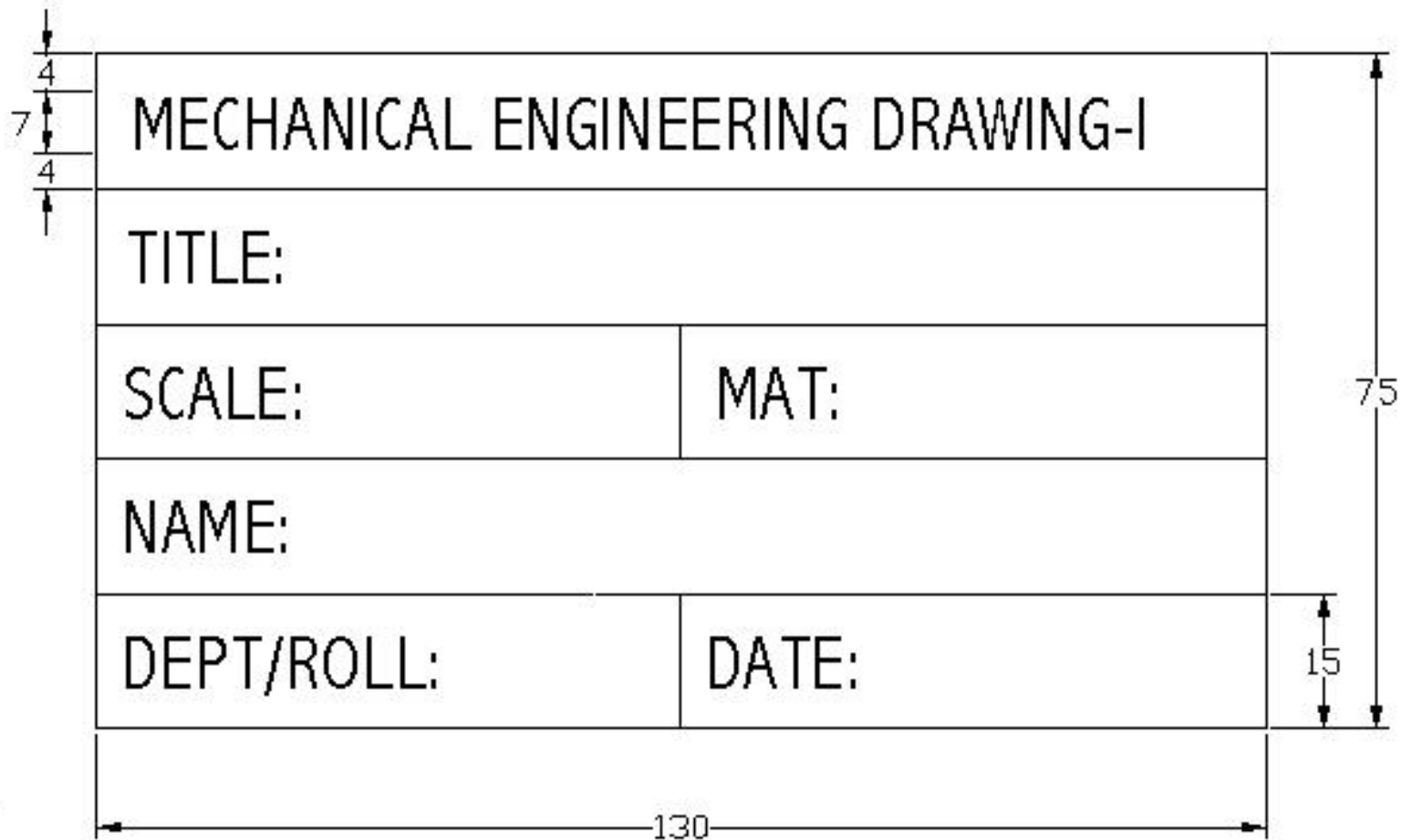
Draw Inclined lines

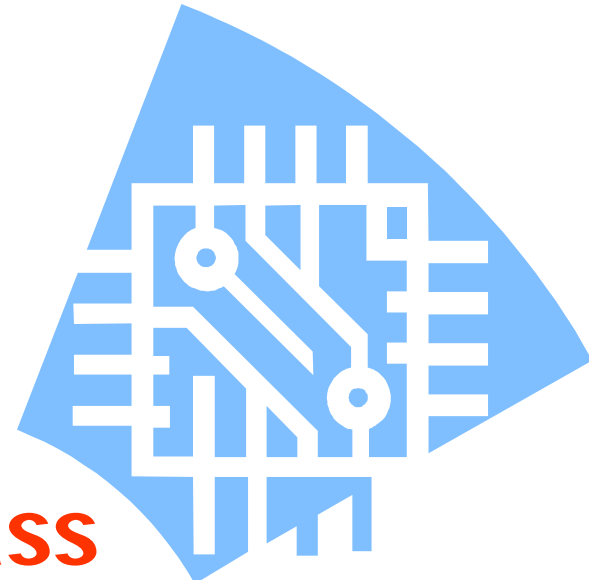


Drawing Sheet Preparation



● ● ● Drawing Sheet Preparation





See You in the Class

Have a Nice Time!