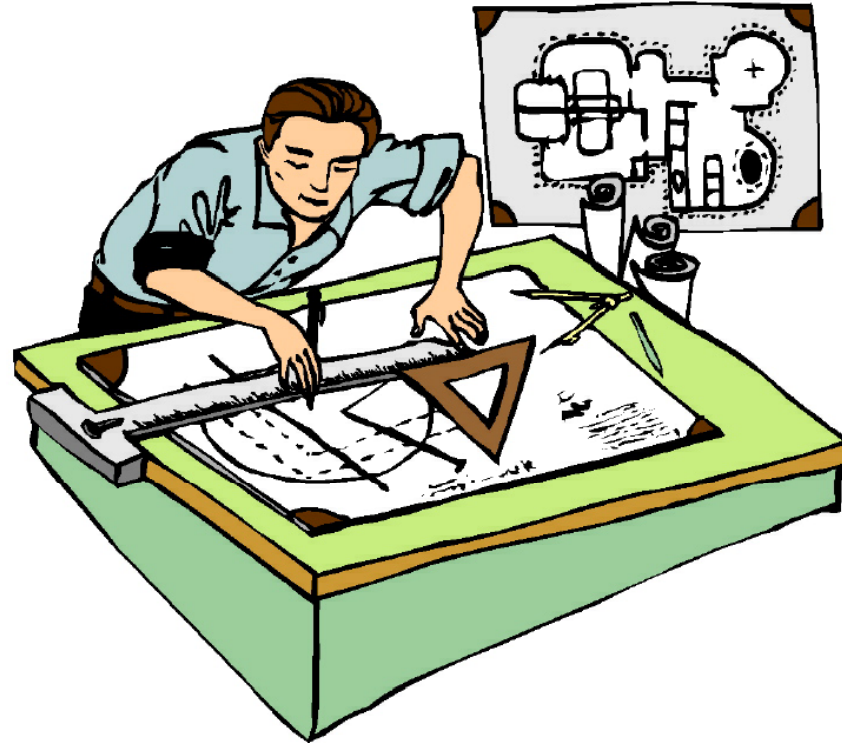


# Auxiliary Views



Drafting/CAD 1  
Mr. Mandl



# Auxiliary Views

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## Learning Objectives:

- ✓ Determine the need for an Auxiliary View.
- ✓ Construct each of the three classifications of Auxiliary Views.
- ✓ Identify the three classifications of Auxiliary Views.
- ✓ Cut Auxiliary sections.
- ✓ Define key terms.
- ✓ Understand and demonstrate the concept of Auxiliary Views on worksheets and CAD drawings.



# Auxiliary Views

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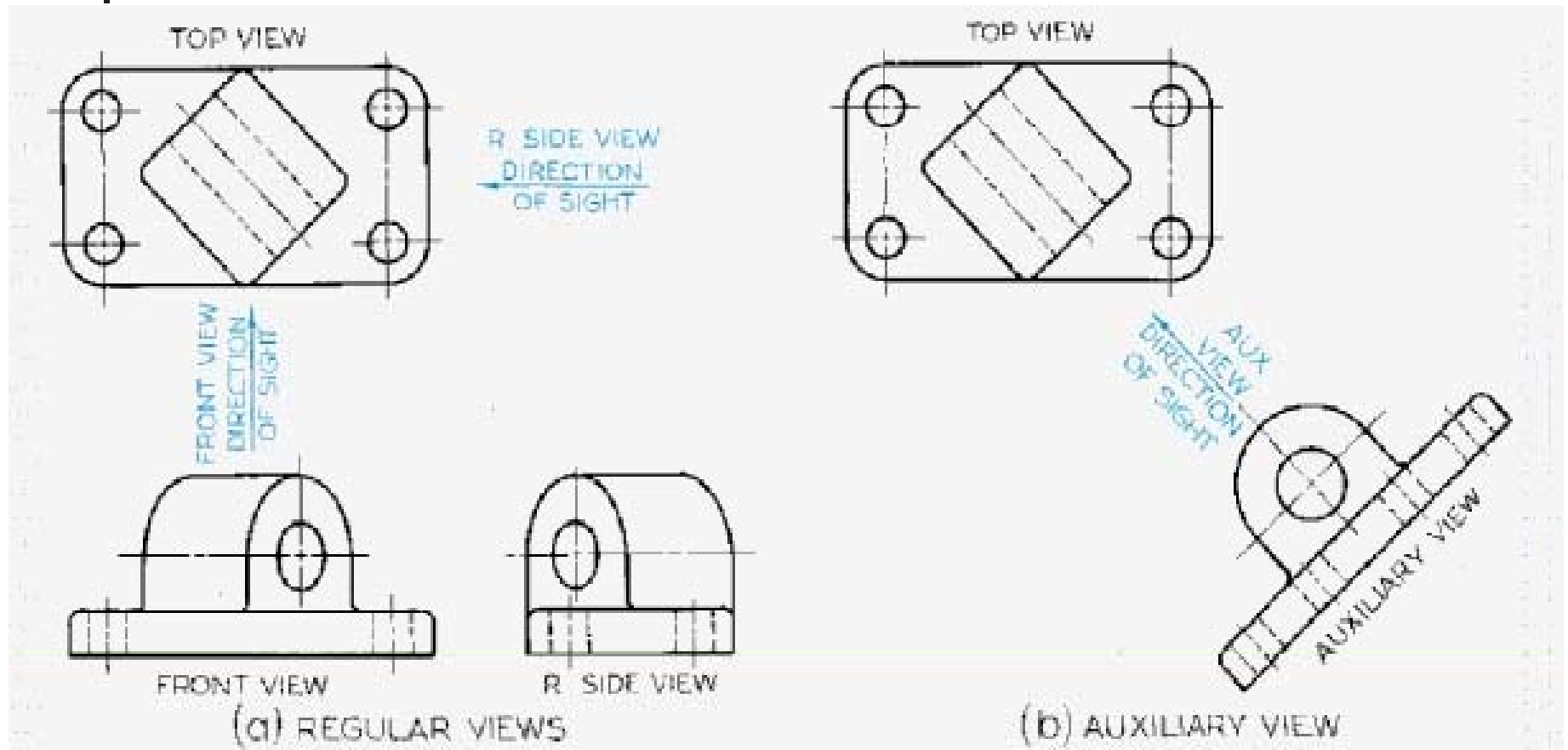
## What is the *main* purpose of Auxiliary Views?

- ✓ Auxiliary views are used to show the true size and shape of inclined or oblique surfaces.

## When do we need to draw Auxiliary Views?

- ✓ When a surface is not parallel to any of the six principal views – Front, Top, Right Side, Left Side, Bottom, or Rear.
- ✓ The surface is shown shorter than its true length.

# Auxiliary Views



- ✓ **The Auxiliary View shows the true size and shape of the principal face and the hole feature.**



# Auxiliary Views

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## Key Terms:

### **Auxiliary View**

- ✓ A view used to show the true size of inclined and oblique surfaces.

### **Auxiliary**

- ✓ Additional.

### **Reference Plane**

- ✓ Lines that serve as datum planes for transferring distances from one orthographic view to the auxiliary view.



# Auxiliary Views

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## Key Terms:

### **Dihedral Angle**

- ✓ The Angle between two planes.

### **Primary Auxiliary View**

- ✓ A view projected on a plane that is perpendicular to one of the principal planes of projection and inclined to the other views.

### **Secondary Auxiliary View**

- ✓ A view projected from the primary auxiliary view.



# Auxiliary Views

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## Three Classifications of Auxiliary Views

- ✓ Auxiliary Views are classified according to the principal dimension shown in the view.

- ✚ **Depth Auxiliary View**

- ✓ An Auxiliary View hinged to the frontal plane.

- ✚ **Height Auxiliary View**

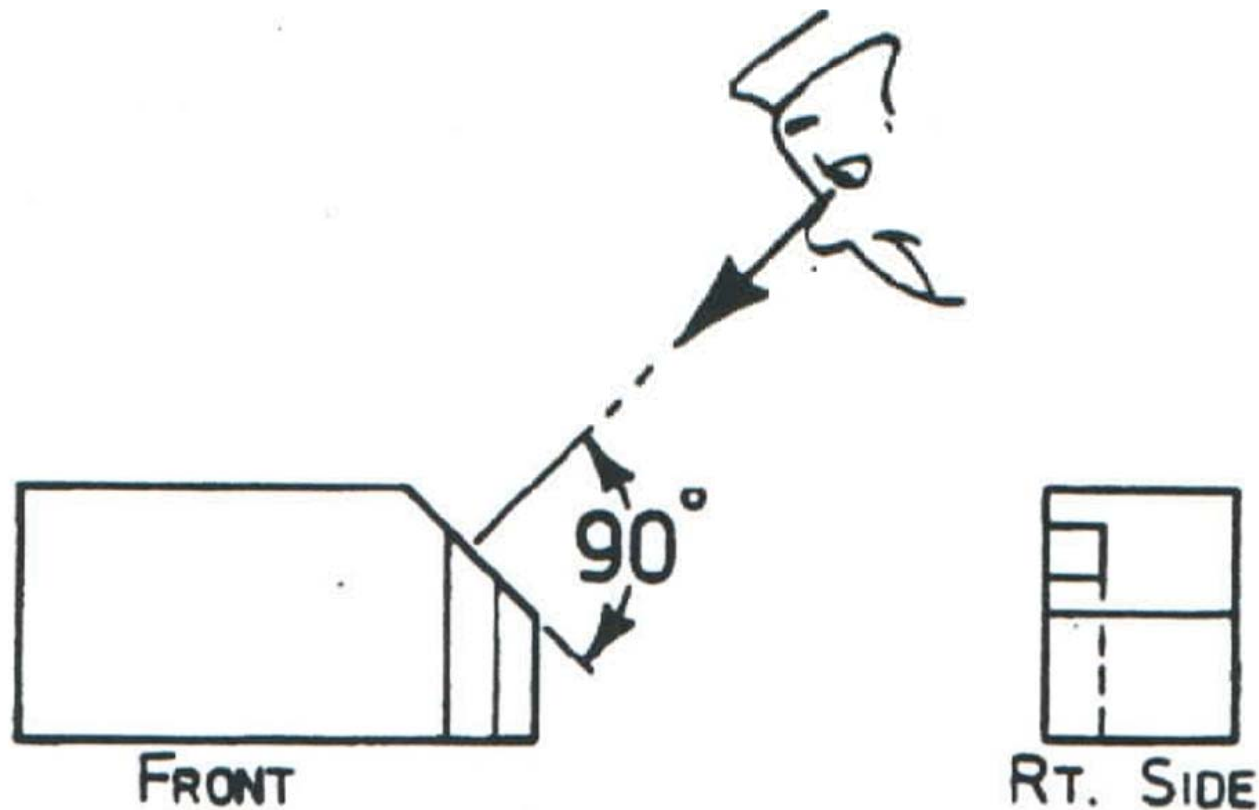
- ✓ An Auxiliary View hinged to the horizontal plane.

- ✚ **Width Auxiliary View**

- ✓ An Auxiliary View hinged to the profile plane.

# Auxiliary Views

## Developing Auxiliary Views



AN AUXILIARY VIEW IS DRAWN LOOKING INTO  
THE SURFACE AT A  $90^\circ$  ANGLE.





# Auxiliary Views

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## Developing Auxiliary Views

### **Reference Plane Method**

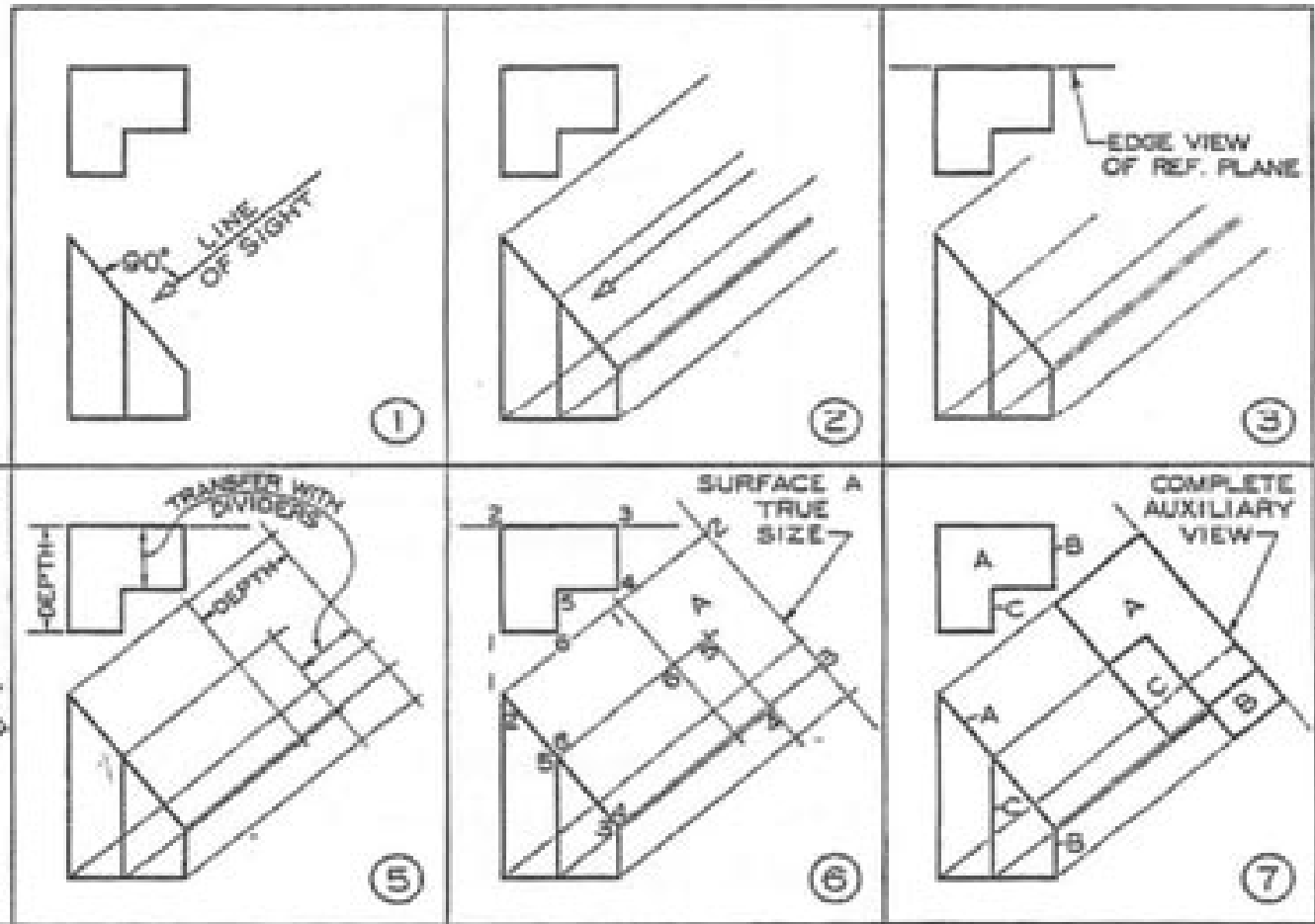
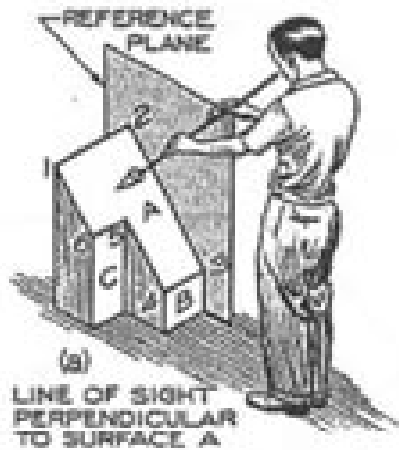
- ✓ Involves the use of 2 reference lines.
- ✓ One reference plane on a main view.
  - ❖ Measurements are taken from this plane.
- ✓ One reference plane on the Auxiliary View.
  - ❖ Measurements are transferred to this plane.

### **Reference Plane**

- ✓ Lines that serve as datum planes for transferring distances from one orthographic view to the auxiliary view.

# Auxiliary Views

## Developing Auxiliary Views



# Auxiliary Views

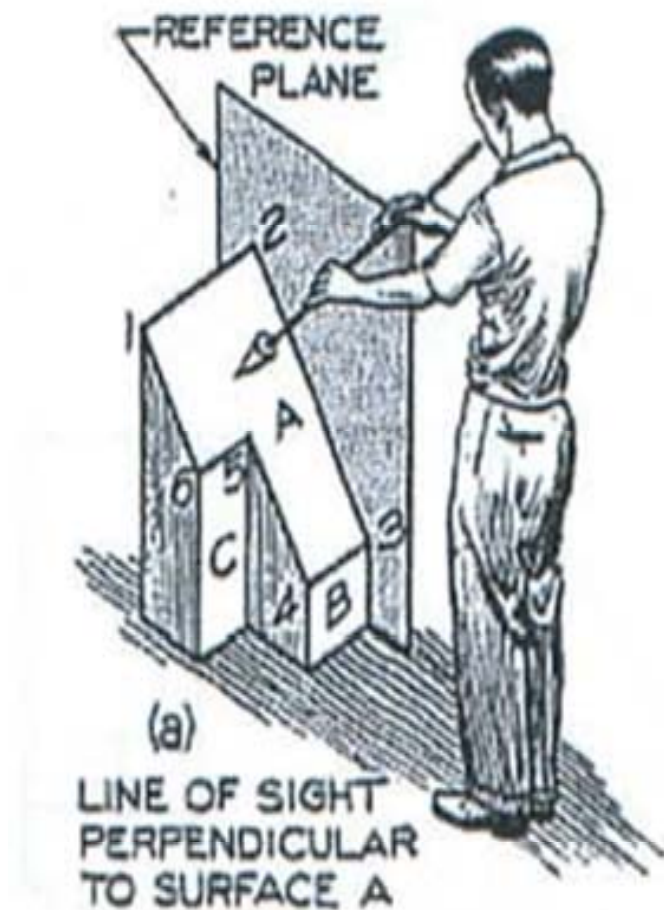
## Developing Auxiliary Views

Line of Sight

90 Degrees

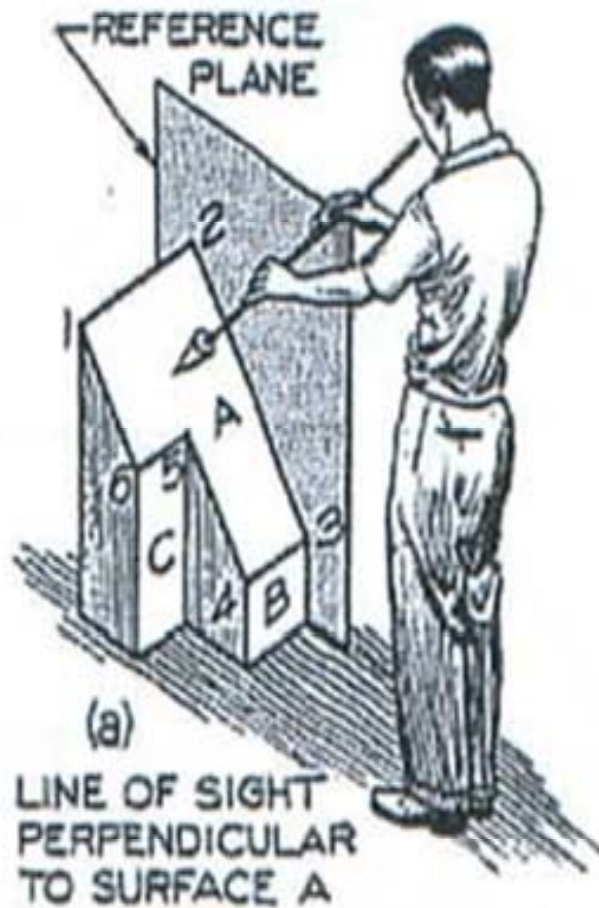
Figure has 3 surfaces

We are concerned with  
Surface 'A'

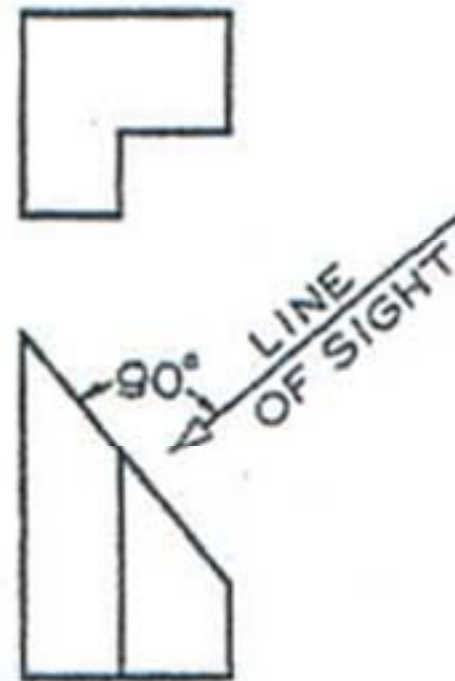


# Auxiliary Views

## Developing Auxiliary Views



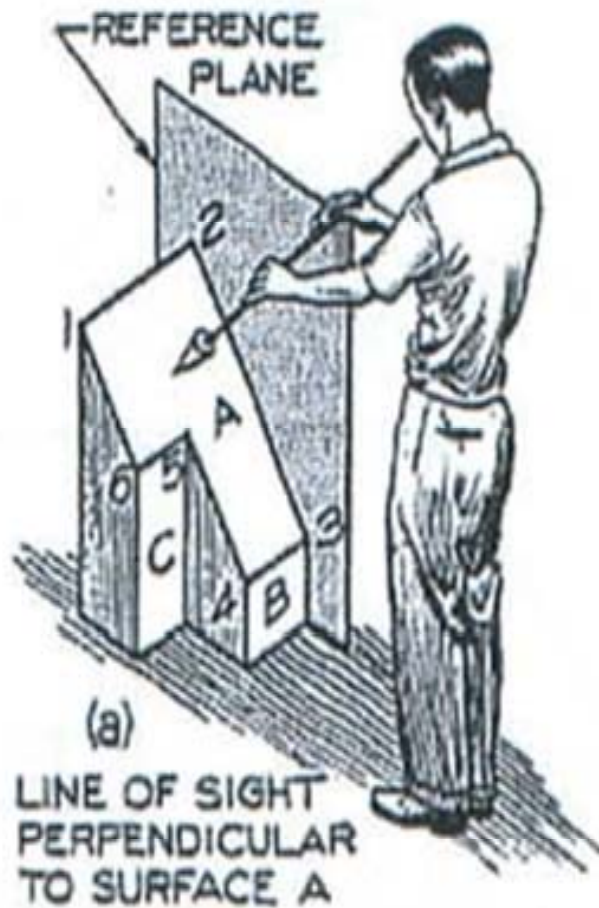
### Step One



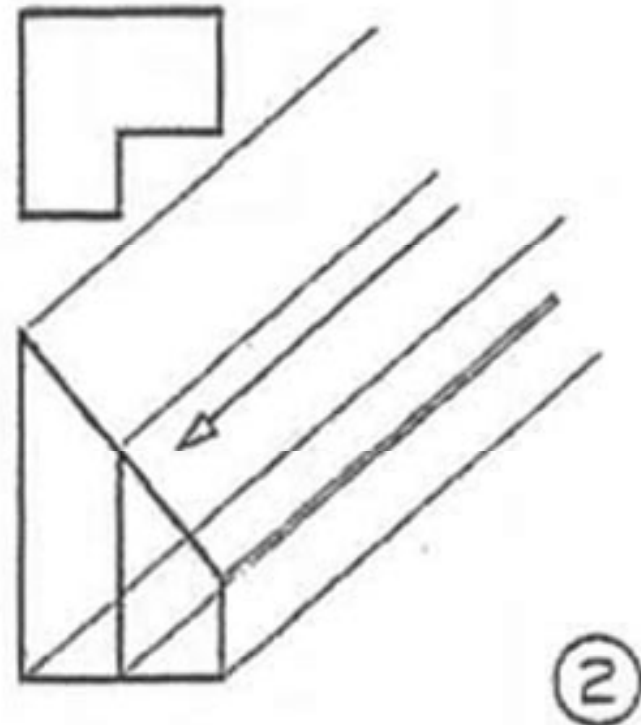
①

# Auxiliary Views

## Developing Auxiliary Views

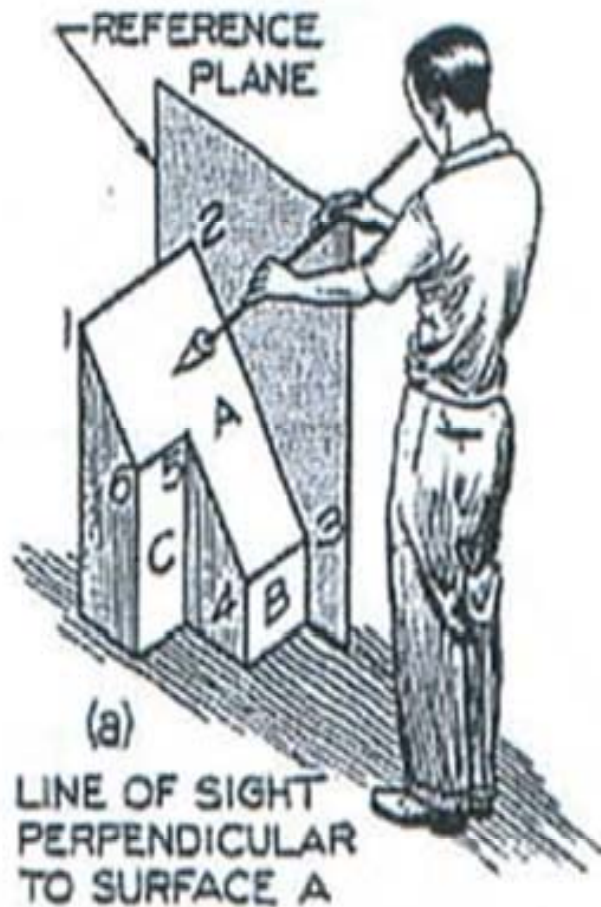


### Step Two

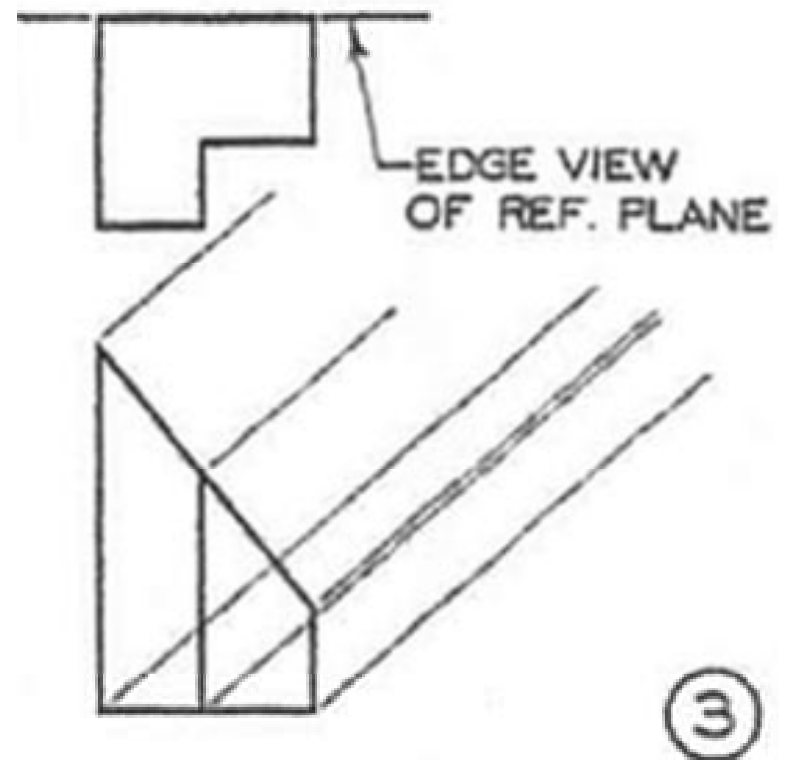


# Auxiliary Views

## Developing Auxiliary Views



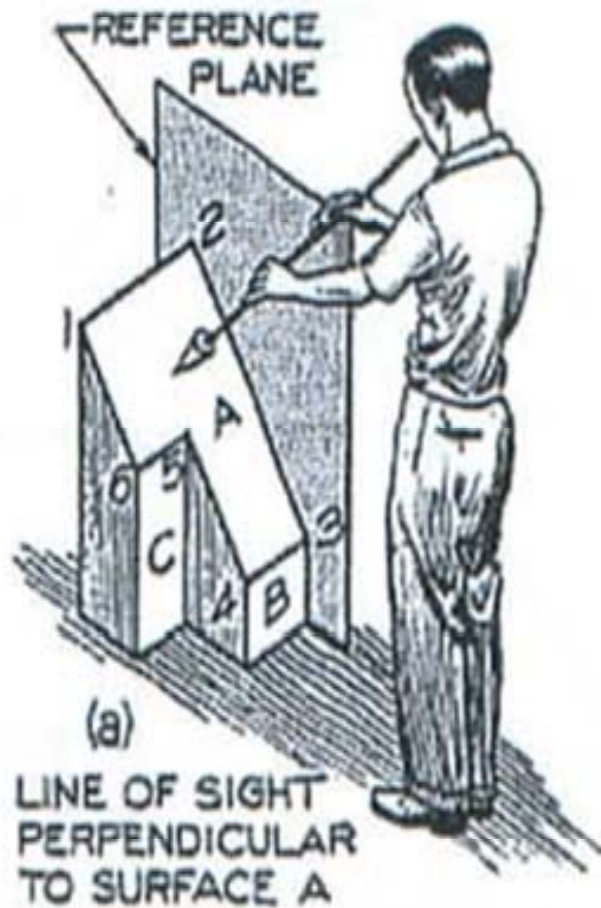
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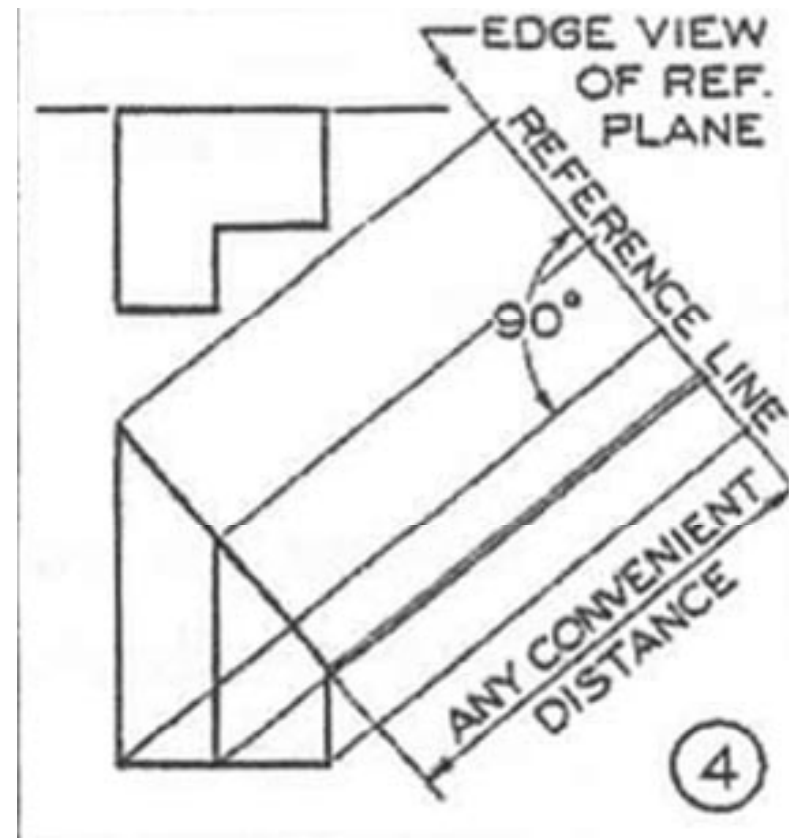


# Auxiliary Views

## Developing Auxiliary Views

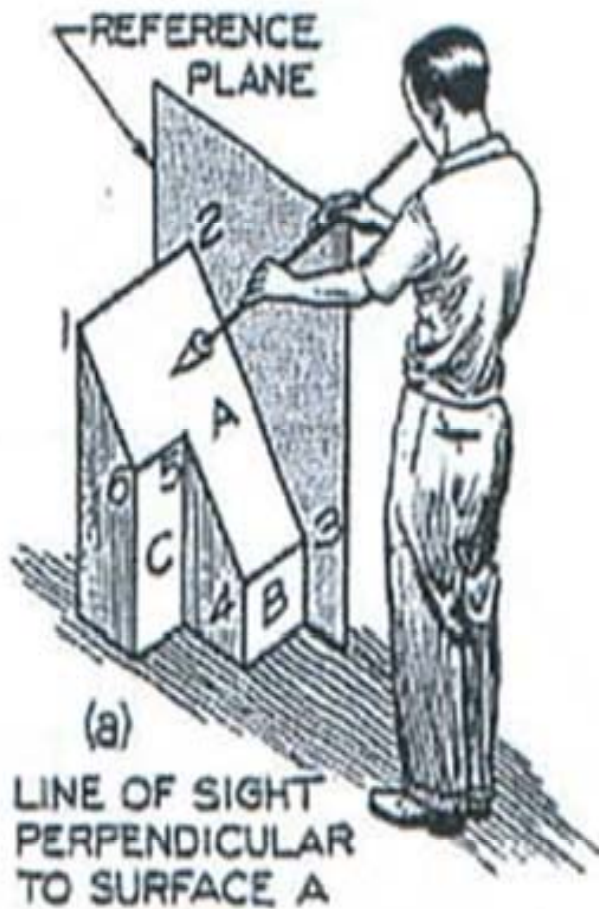


### Step Four

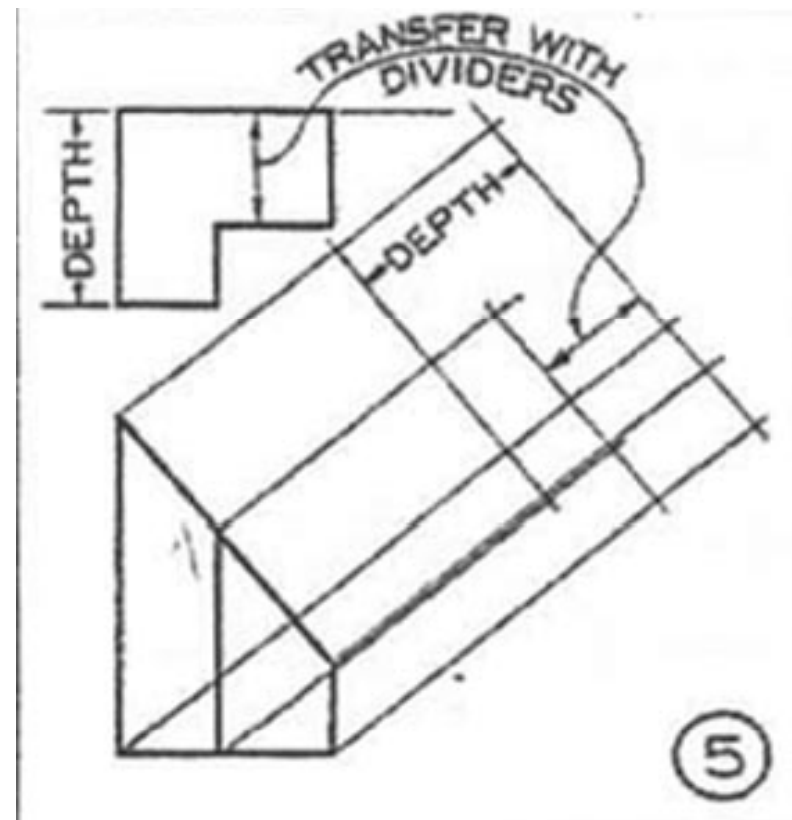


# Auxiliary Views

## Developing Auxiliary Views



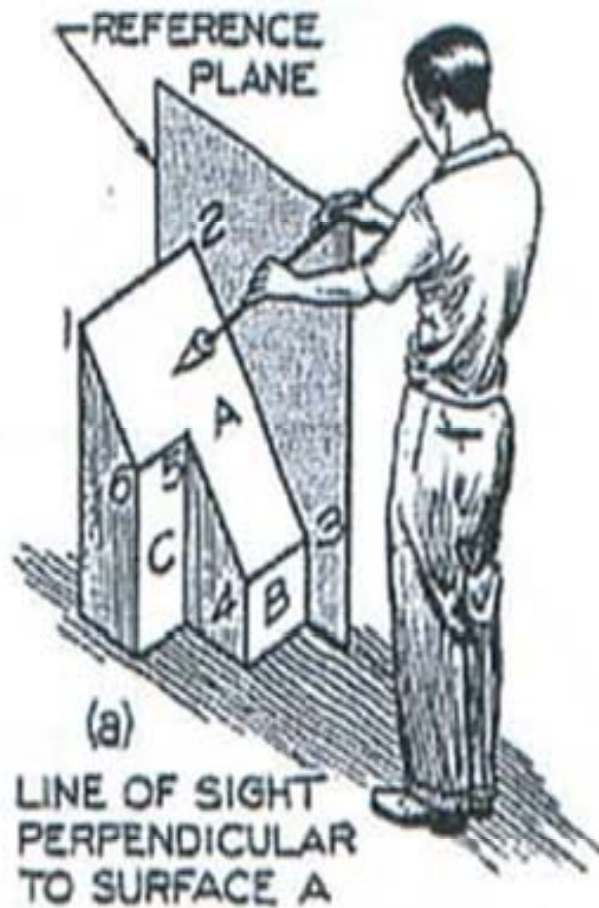
### Step Five



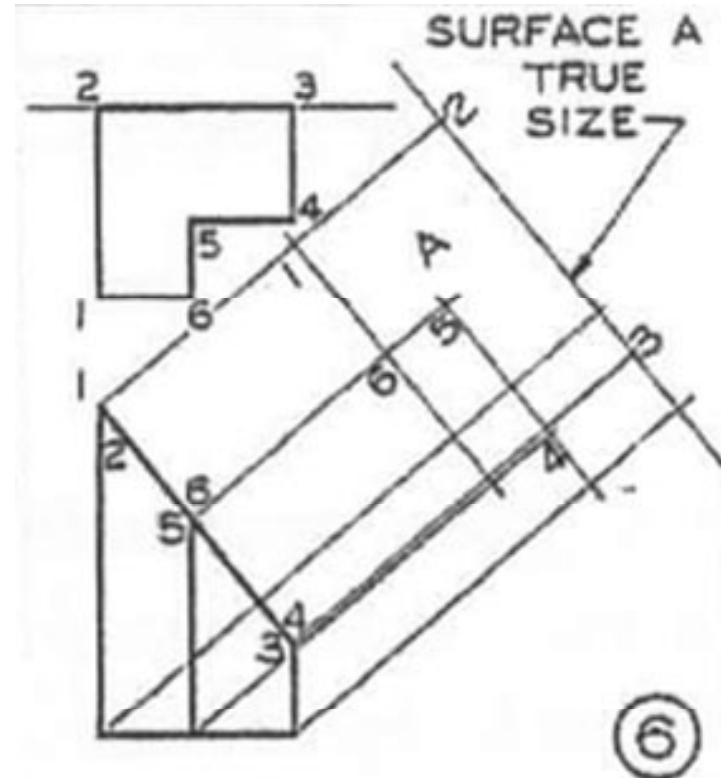


# Auxiliary Views

## Developing Auxiliary Views

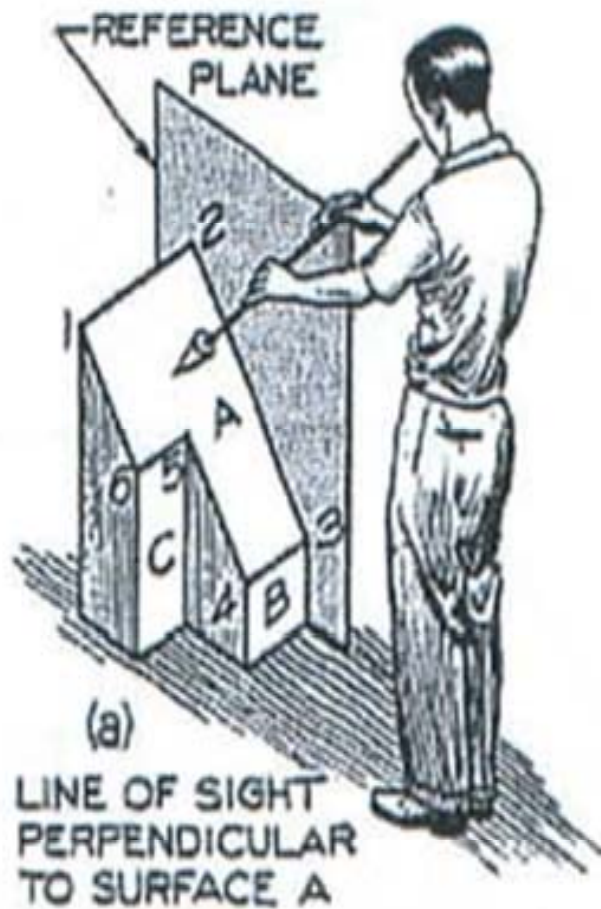


### Step Six

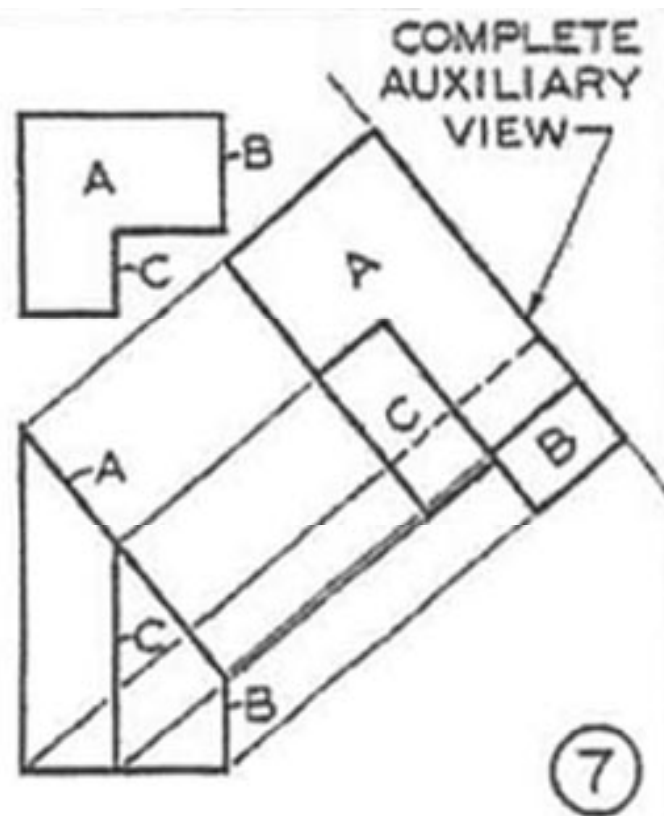


# Auxiliary Views

## Developing Auxiliary Views



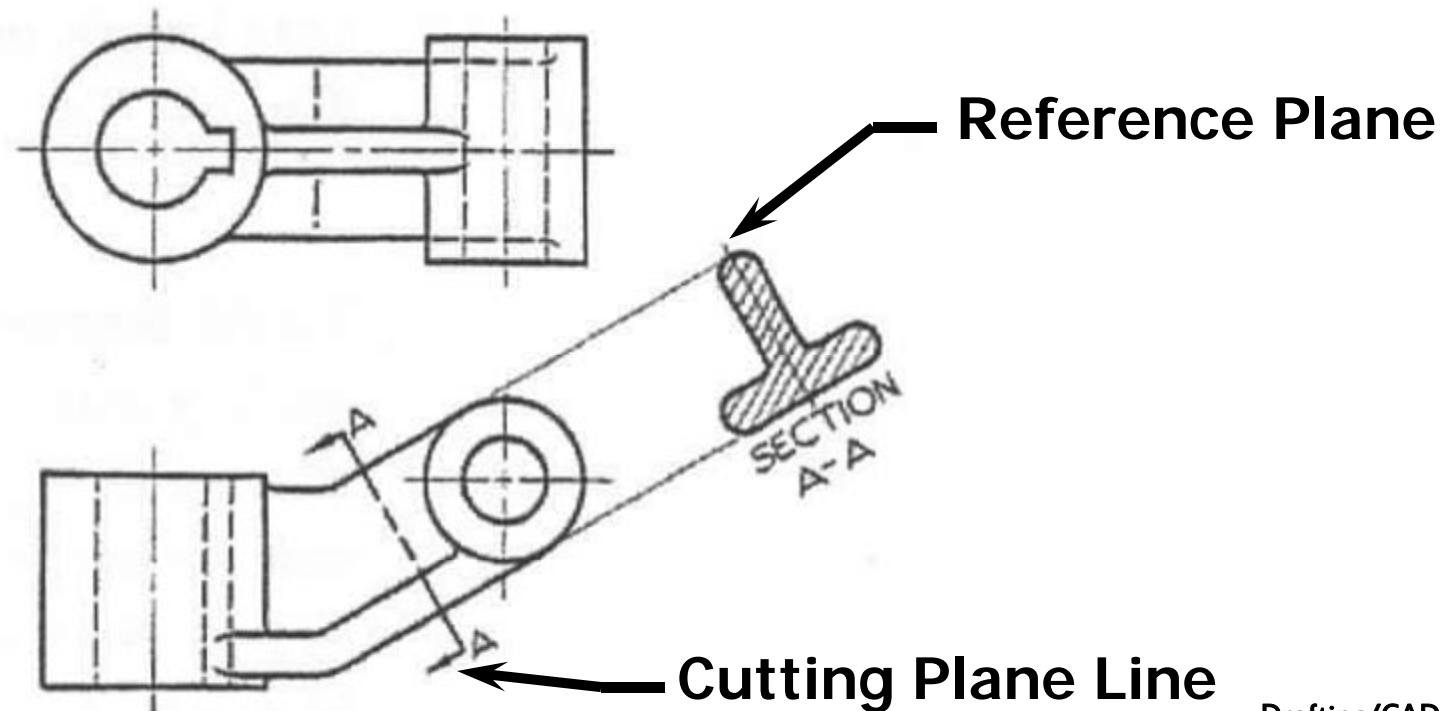
### Step Seven



# Auxiliary Views

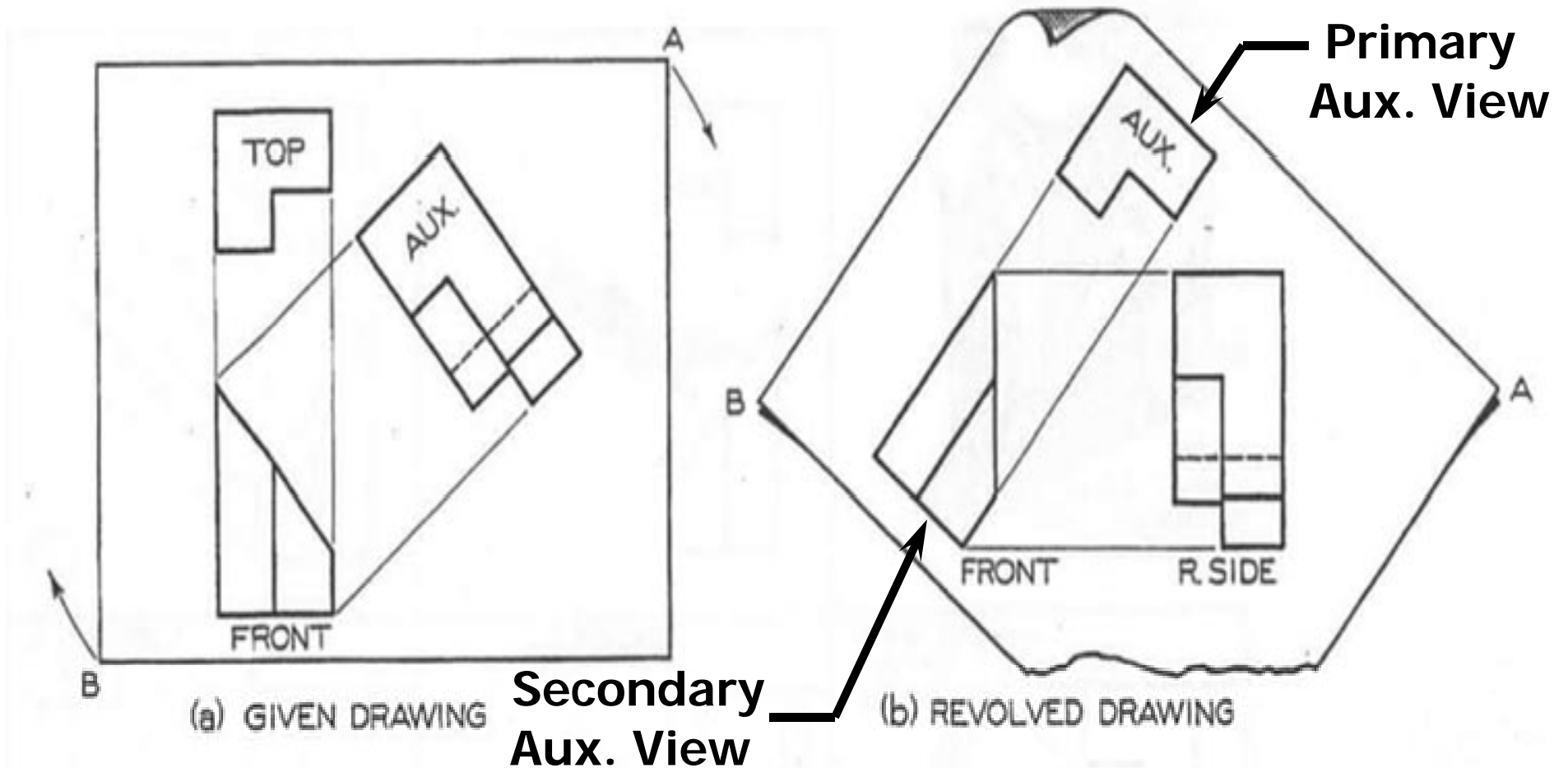
## Auxiliary Sections

- ✓ Auxiliary Sections is cut on an auxiliary plane.
- ✓ A section cut on an angle.
- ✓ A reference plane and cutting plane line are used.



# Auxiliary Views

## Rotating Auxiliary View Drawings





# Auxiliary Views

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## Summary

- ✓ **Auxiliary views show true size and shape of inclined or oblique surfaces.**
- ✓ **Used when a surface is not parallel to any of the six principal views.**
- ✓ **When not parallel, the surface is shown shorter than its true length.**



# Auxiliary Views

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## Summary

- ✓ **The three classifications of Aux Views are Width, Height, and Depth.**
- ✓ **Auxiliary Views are classified according to the principal dimension shown in the view.**
- ✓ **An Auxiliary Section is cut on an auxiliary plane – on an angle.**