

ORTHOGRAPHIC PROJECTIONS

A stylized graphic on a dark blue background. At the bottom, there is a bar chart with several vertical bars of varying heights. The central bar is the tallest and is highlighted with a bright green-to-blue gradient. From the top of this central bar, a large number of thin, curved lines radiate outwards, resembling a firework or a starburst. The lines are colored in shades of purple, blue, and green. The text 'ORTHOGRAPHIC PROJECTIONS' is written in a light blue, sans-serif font across the middle of the image, overlapping the radiating lines.

UNIT -1 (b)

What is meant by Orthographic Projection?



- ORTHO means **Right-angle**;
- GRAPHIC means **Drawing**;
- ORTHO GRAPHIC means **Right-angled Drawing**.
- When the projectors are perpendicular to the plane on which the projection is obtained and are also parallel to each other, it is known as **Orthographic Projection**.

Principles of Orthographic Projections

- **Projectors**

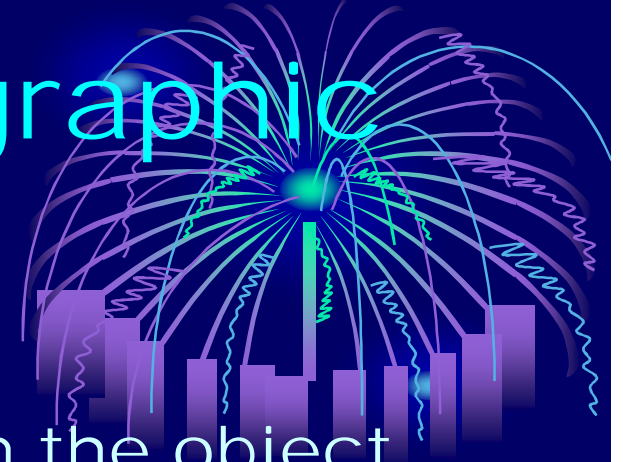
The lines or rays drawn from the object to the plane are called Projectors.

- **Plane of Projection**

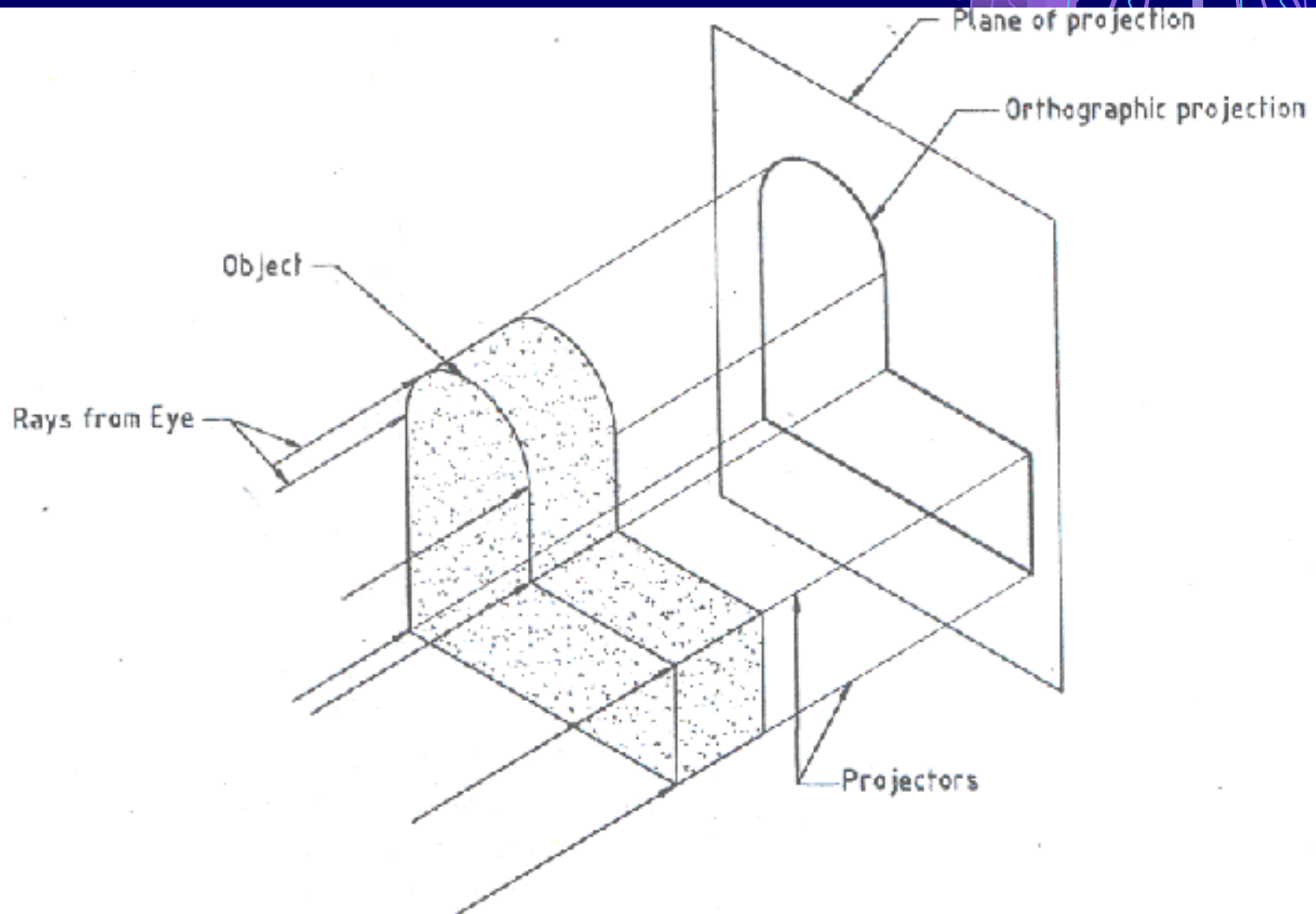
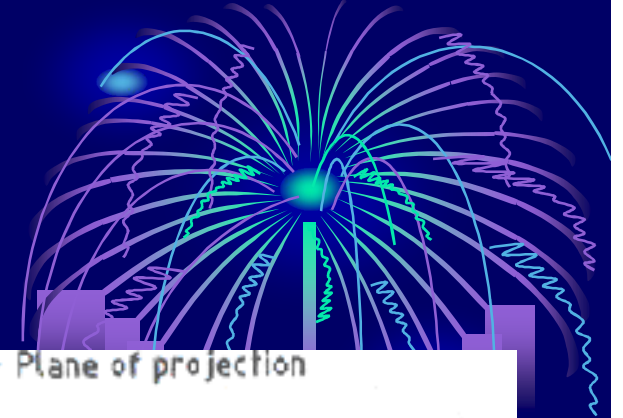
The transparent plane on which the projections are drawn is known as Plane of Projection.

- **Projection**

The figure or view formed by joining, in correct sequence, the points at which the rays meet the plane is called the Projection of the object.



Orthographic Projection

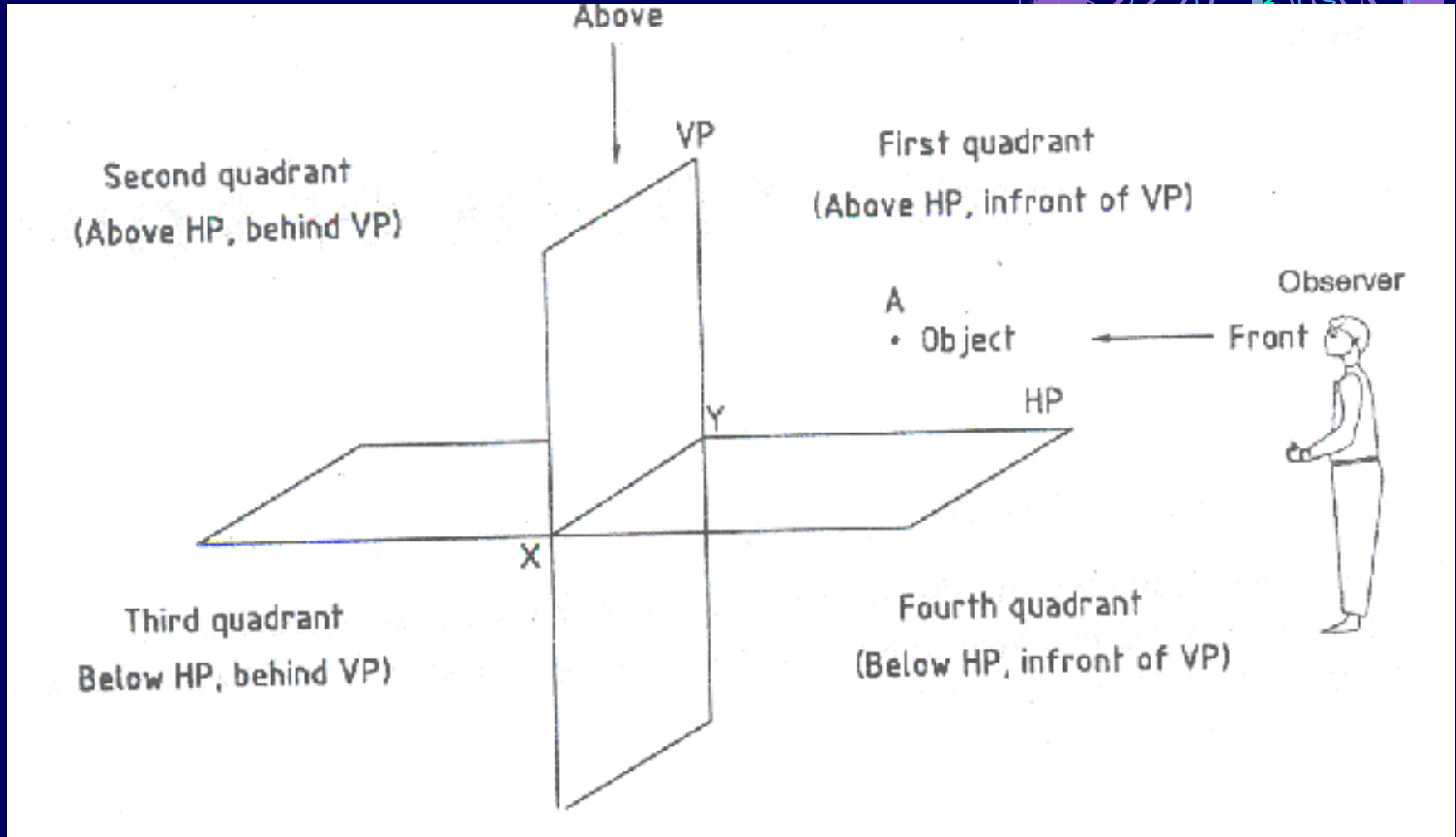


PICTORIAL PROJECTIONS

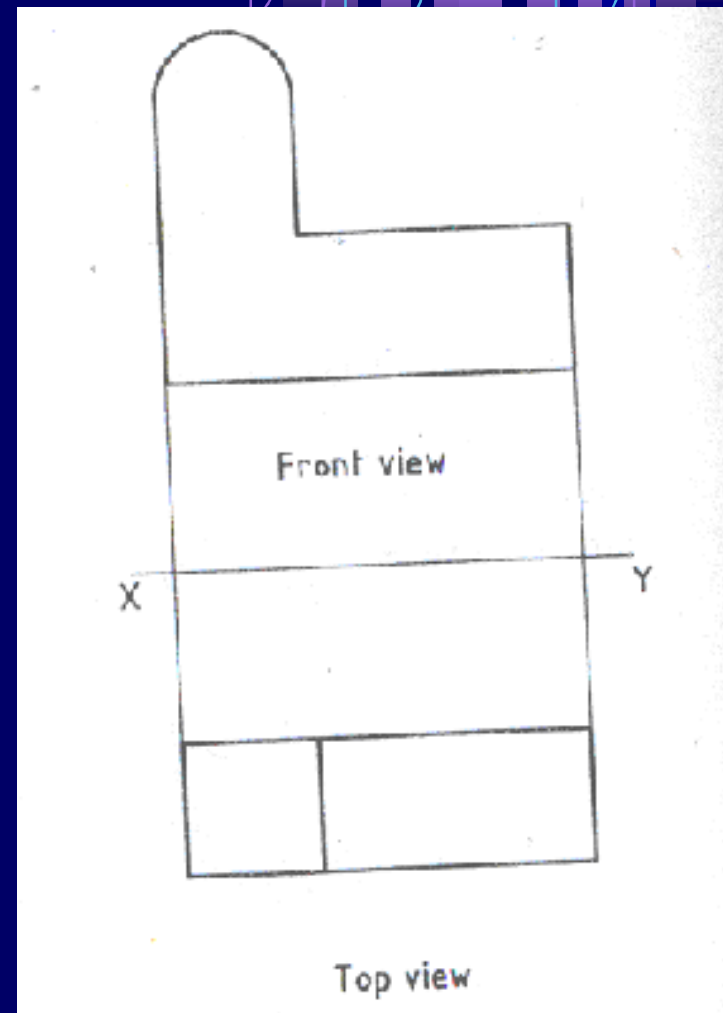
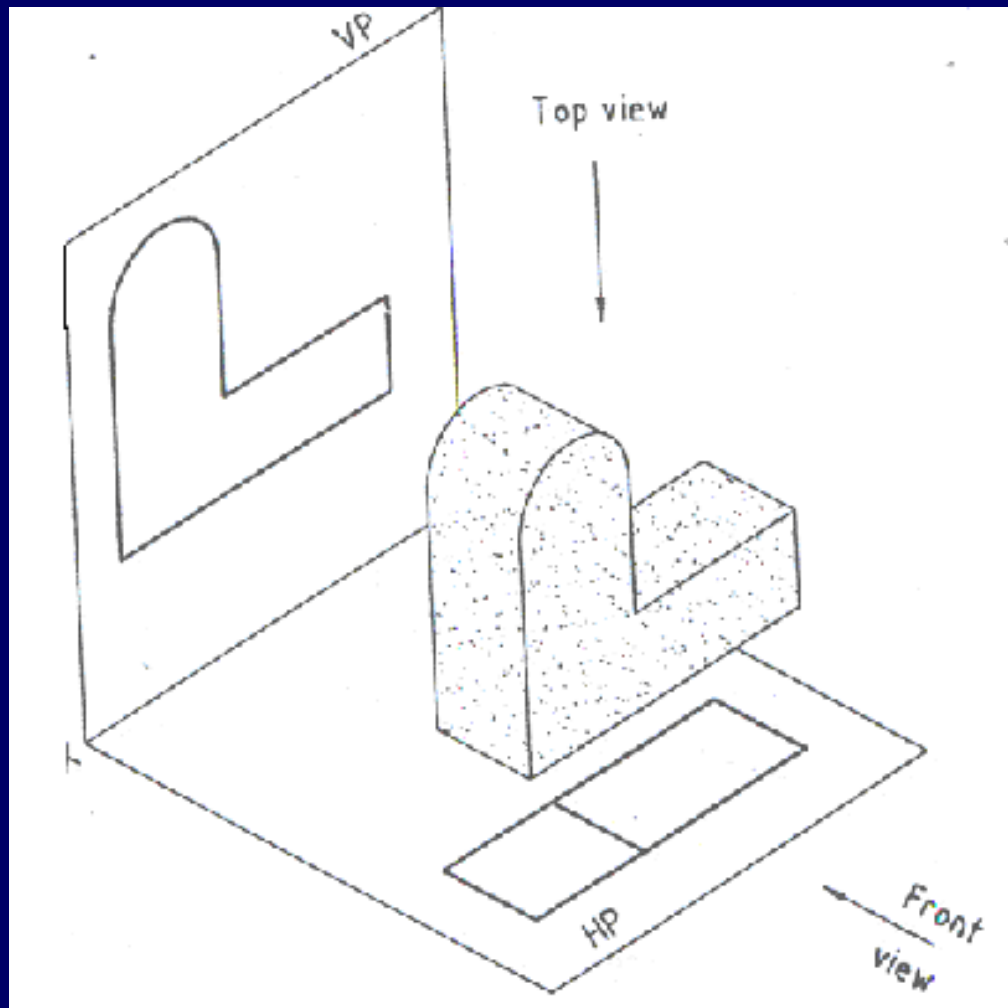


- The projections in which the description of the object is completely understood in one view is known as **Pictorial Projection**.
 1. **Isometric Projection**: It gives the true shape of the object, but not the true size. It shows three sides of the object in one projection.
 2. **Oblique Projection**: In this, the projectors are not perpendicular to the plane of projection.
 3. **Perspective Projection**: In this, the projecting lines or visual rays converge at a point. Hence it is termed as Convergent Projection. The picture formed on the picture plane by the piercing points of the projecting lines from the eye to the object.

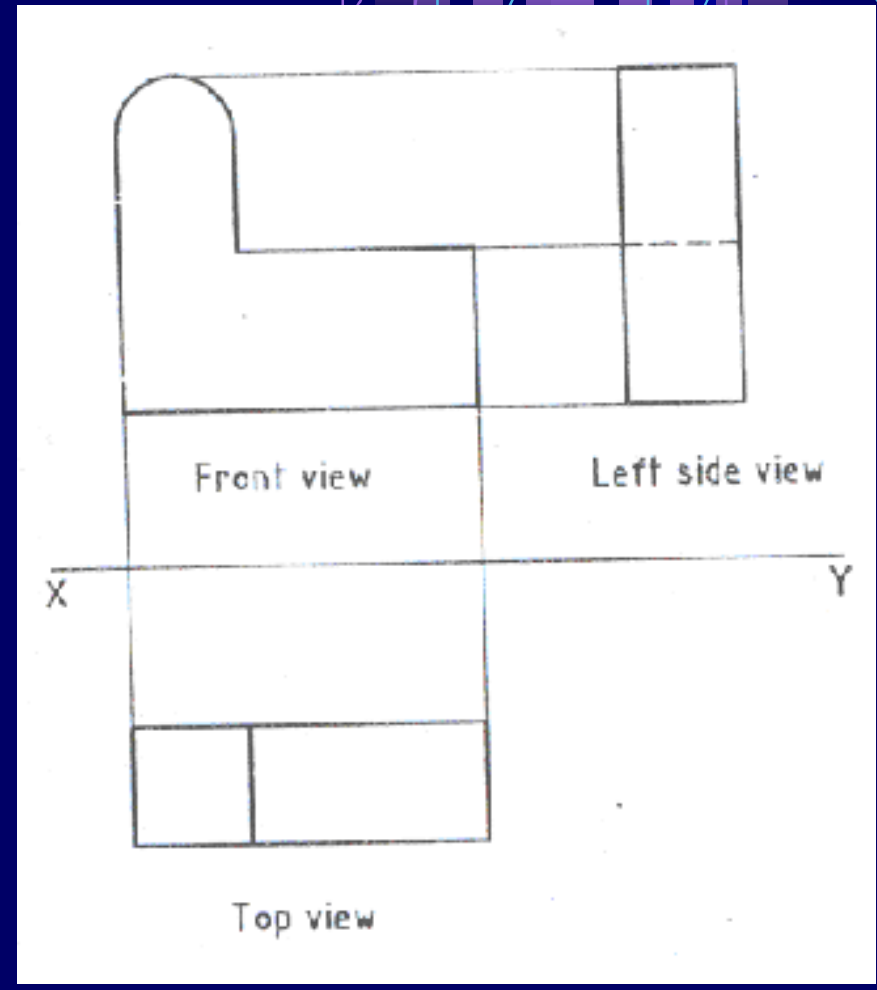
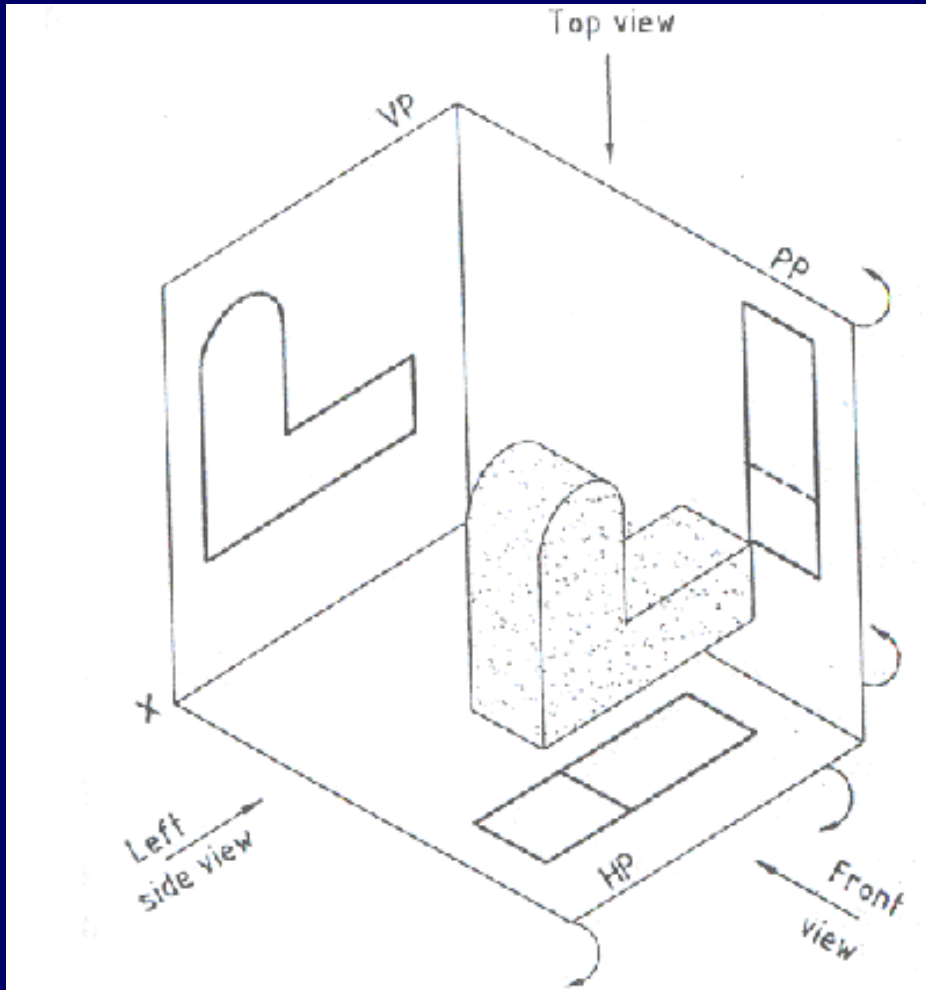
Four Quadrants



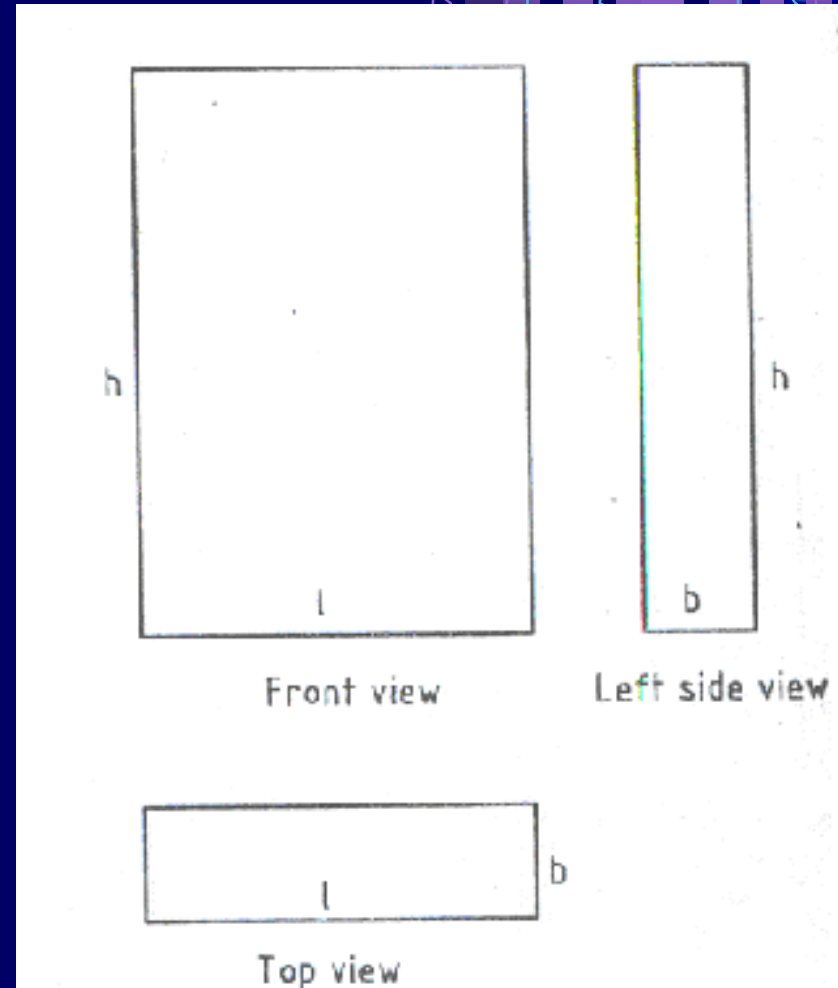
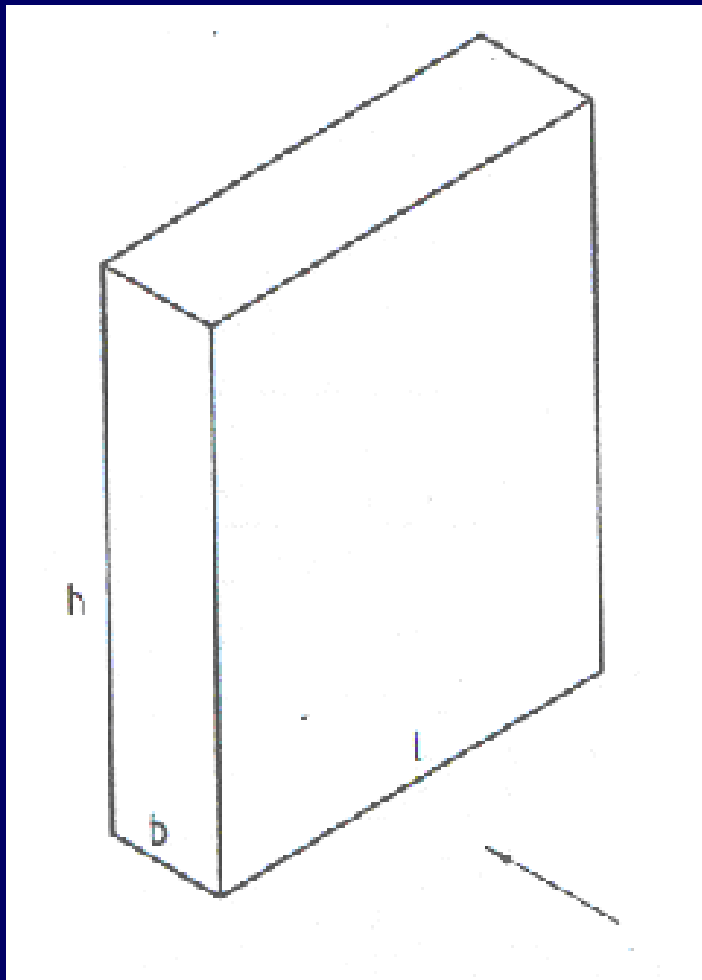
Orthographic projection of an object (First angle Projection)



Orthographic views (Multiple views and placement)



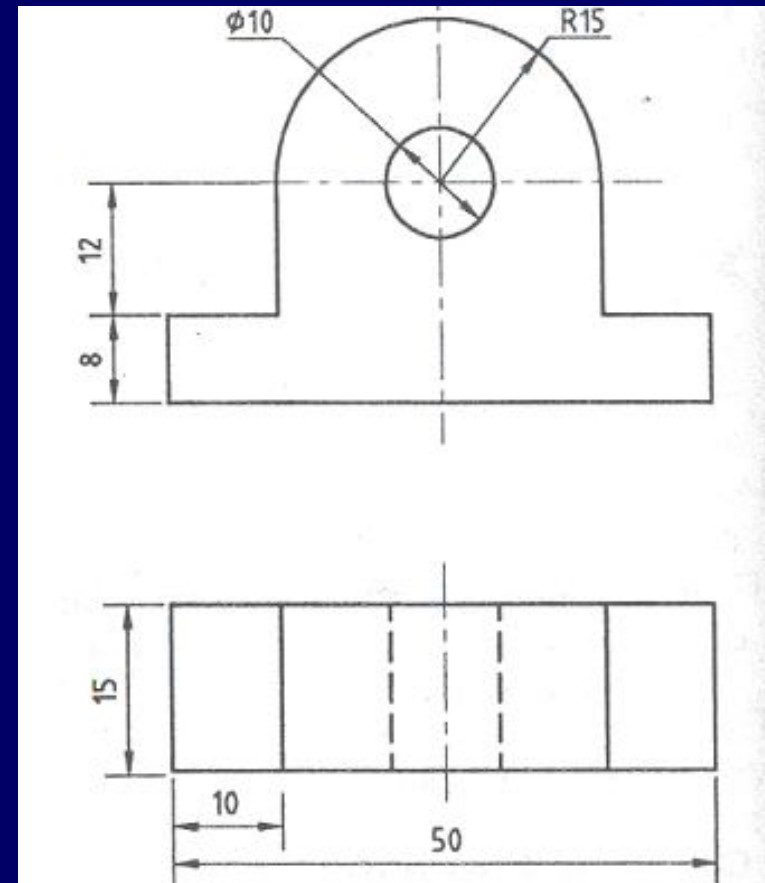
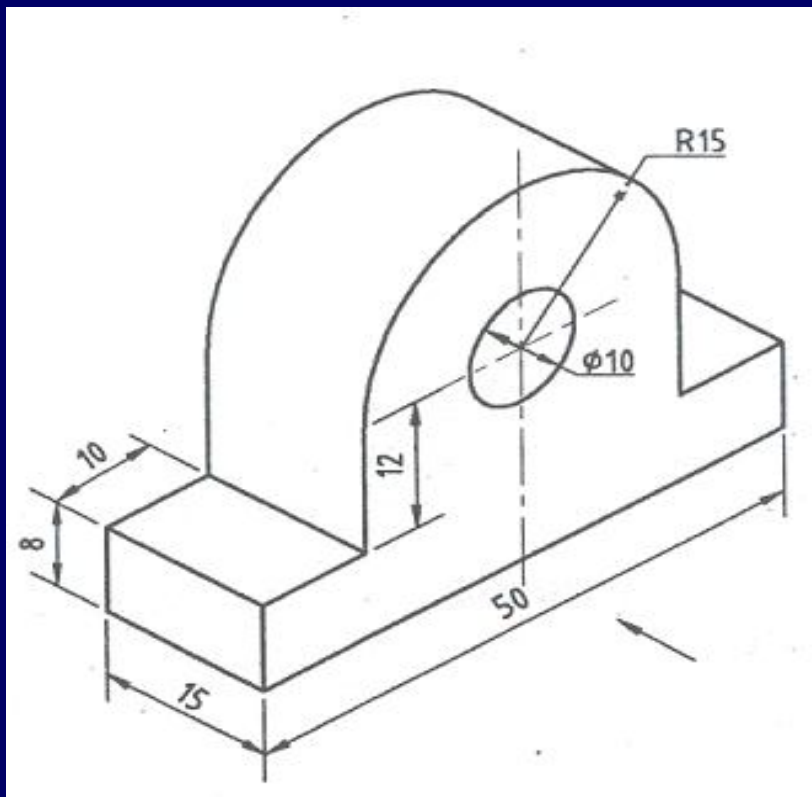
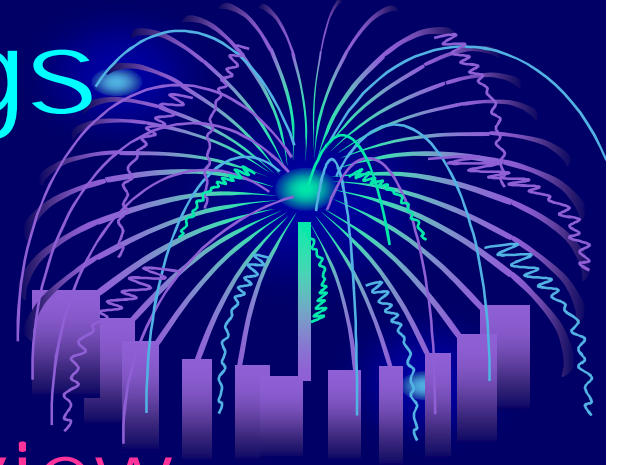
Representation of Three dimensional objects



Two-view Drawings

Problem - 1

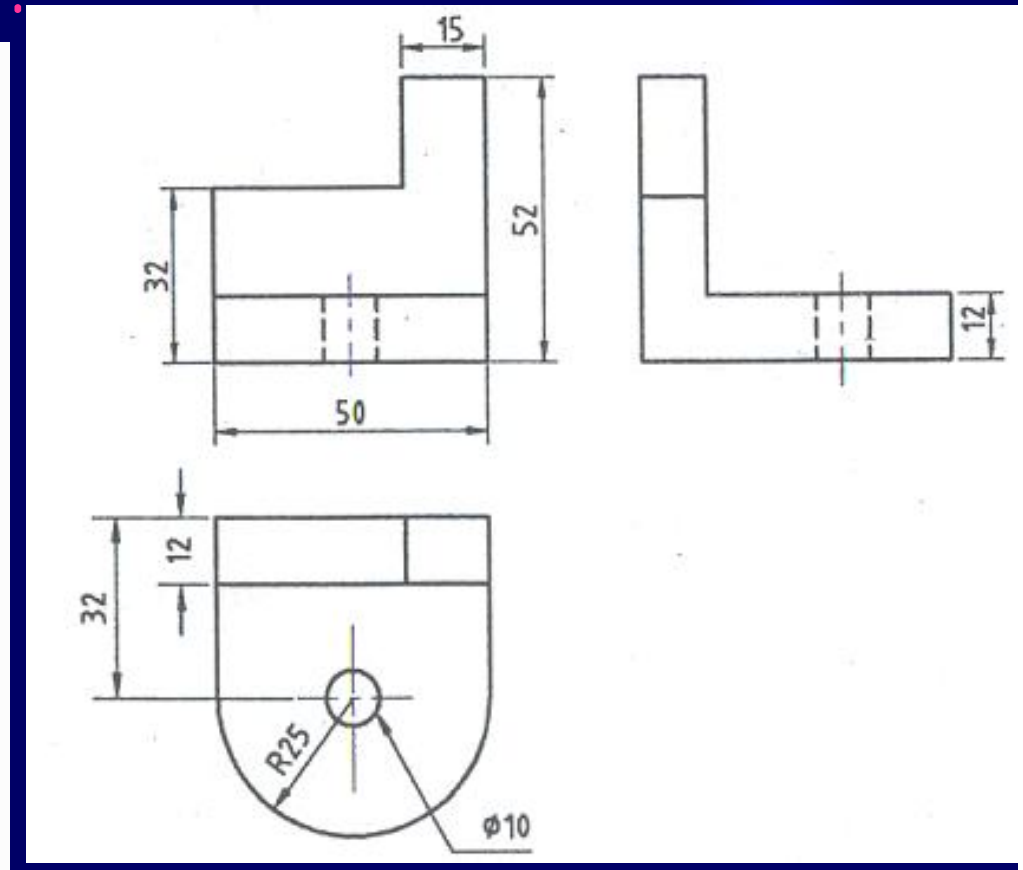
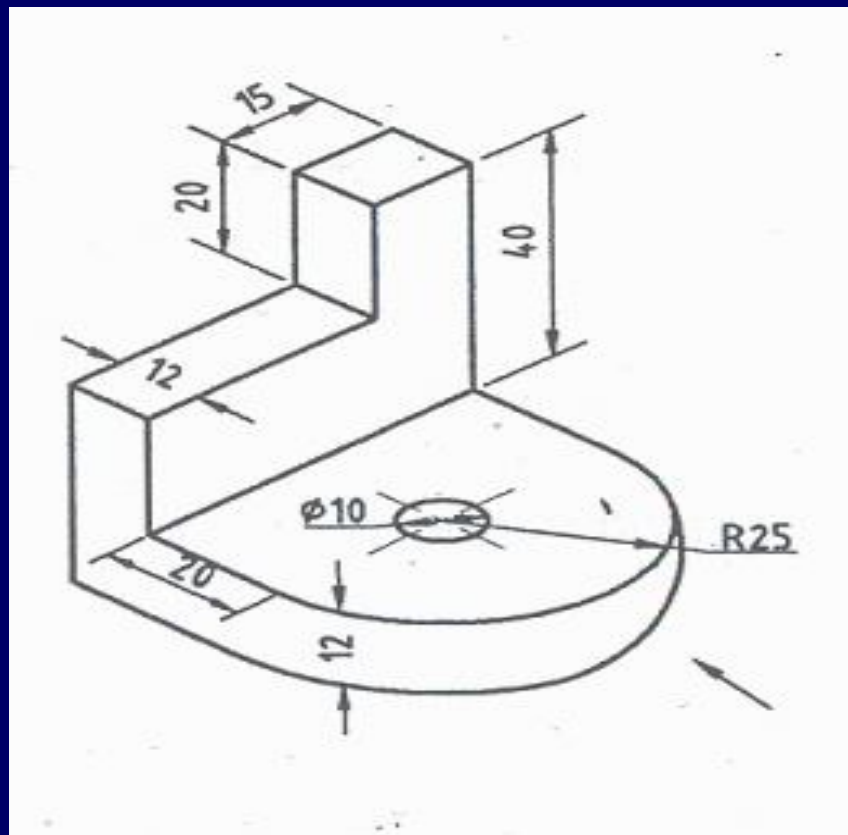
Draw Front view, Top view.



Three-view Drawings

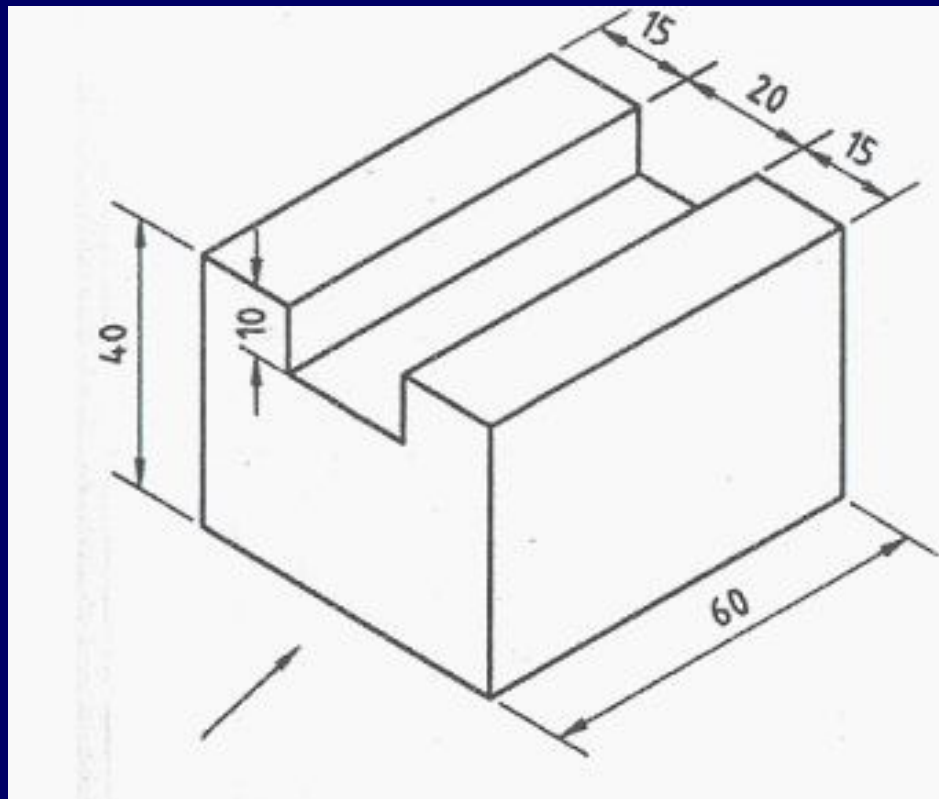
Problem - 2

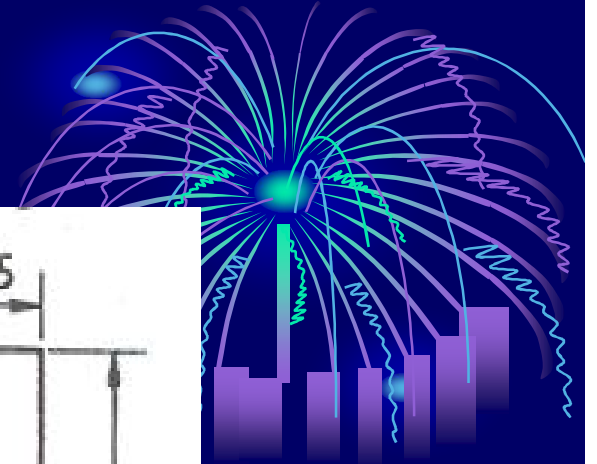
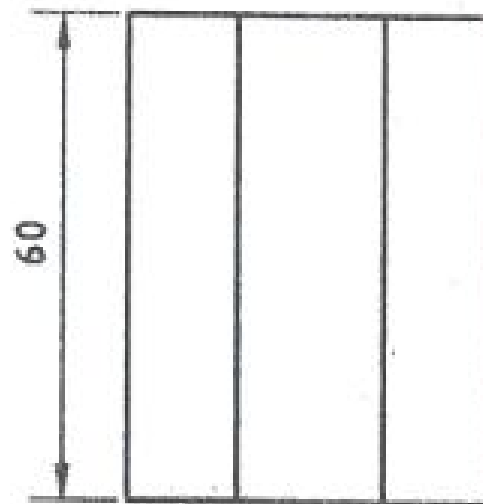
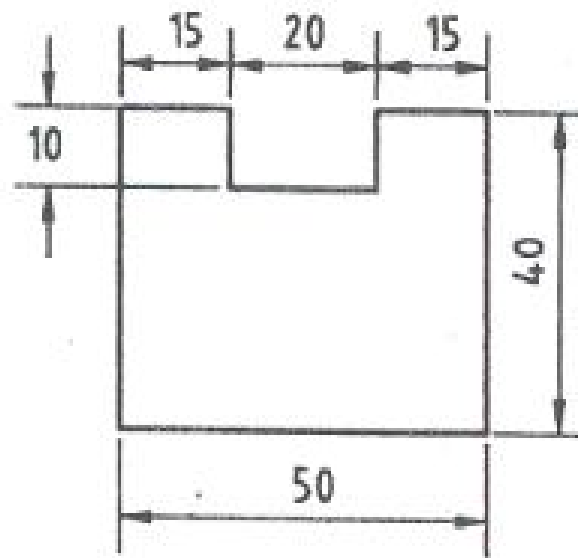
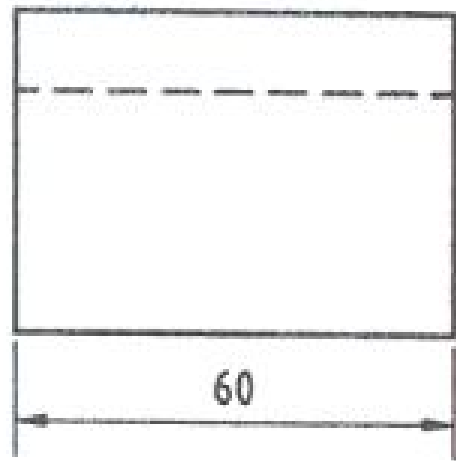
Draw Front view, Top view,
Left side view.



Problem - 3

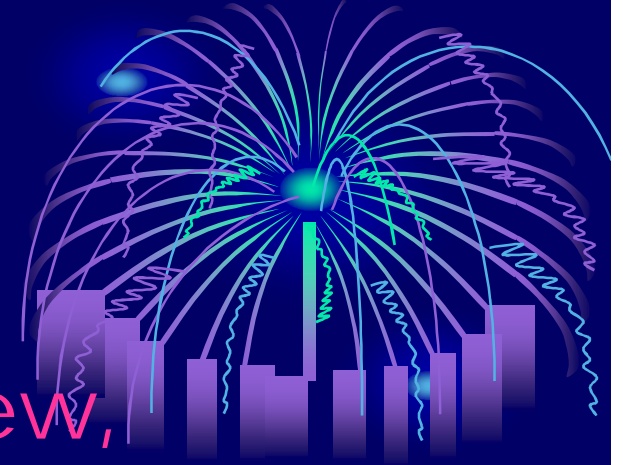
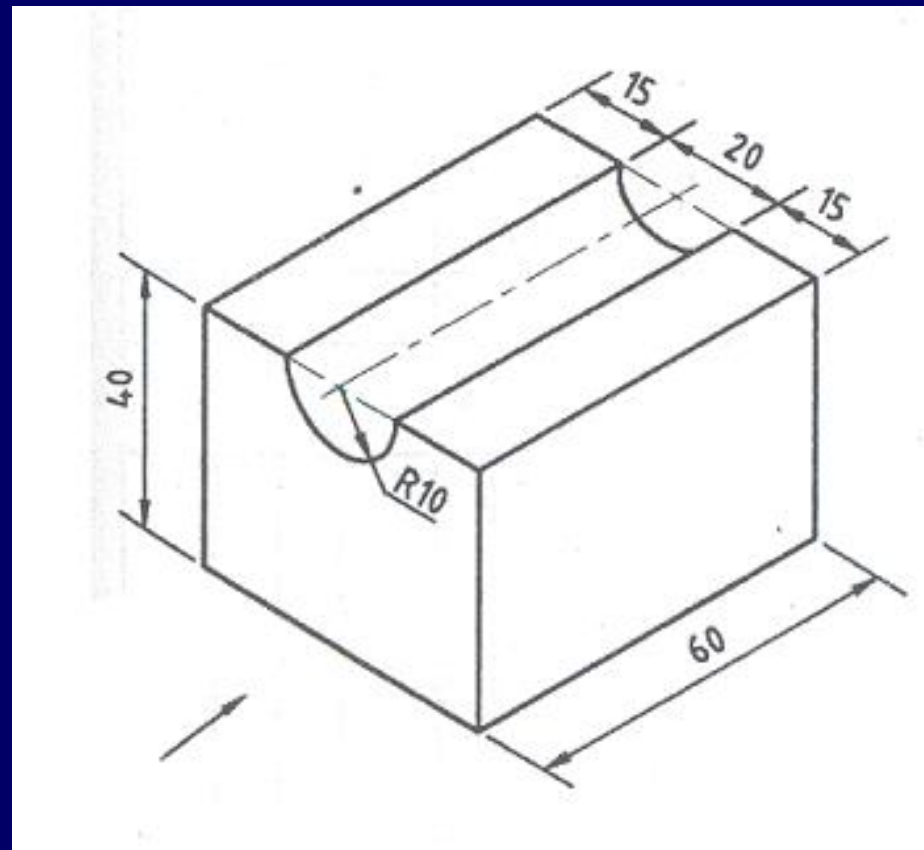
Draw Front view, Top view, Right side view.

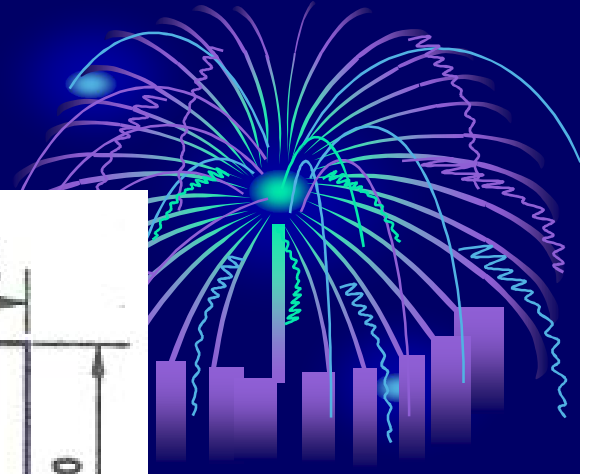
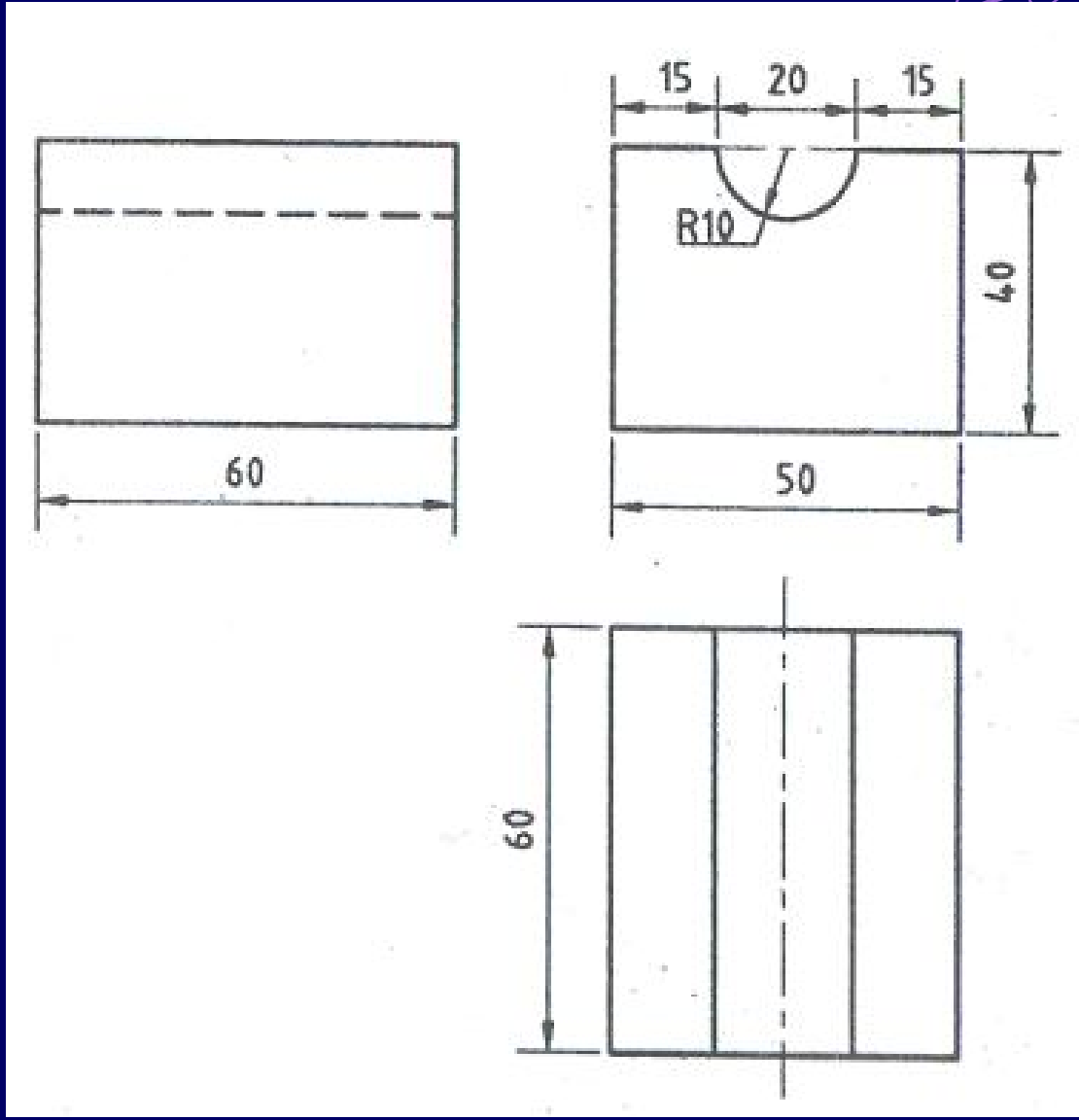




Problem - 4

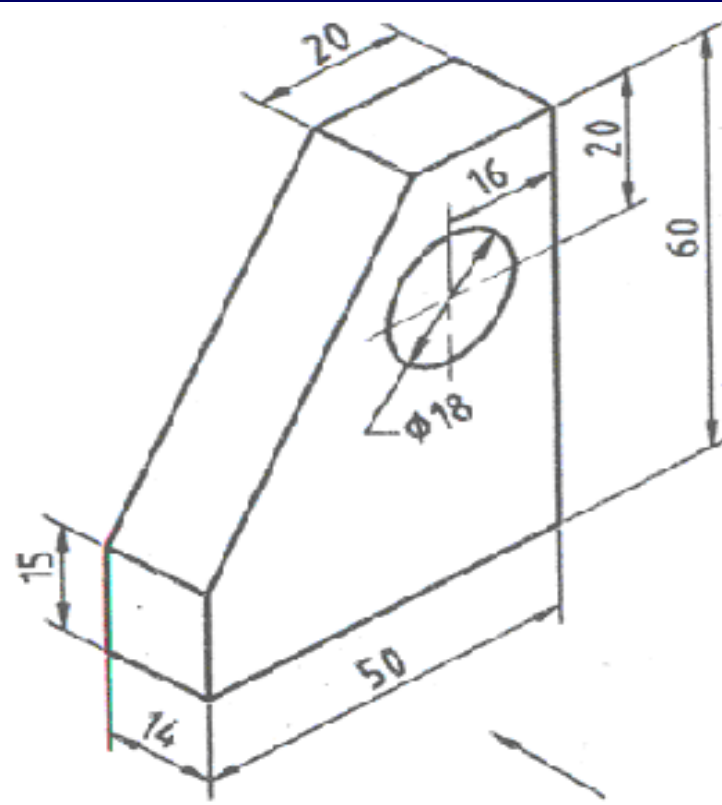
Draw Front view, Top view,
Right side view.



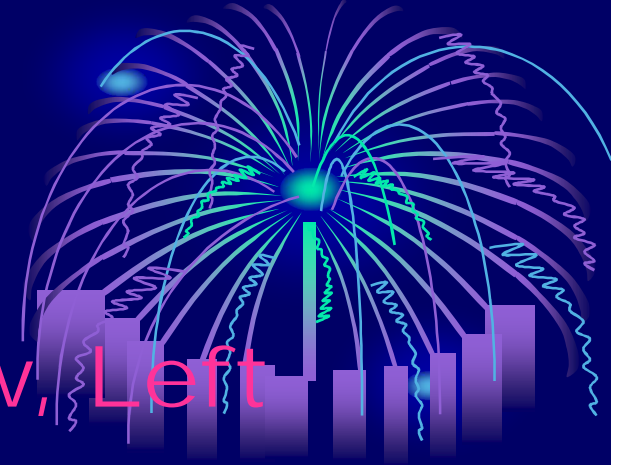


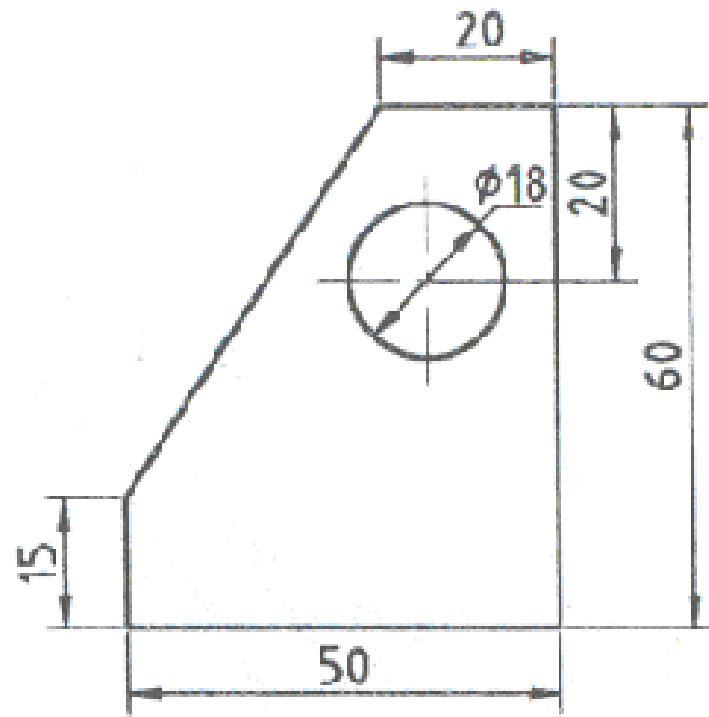
Problem - 5

Draw Front view, Top view, Left side view.

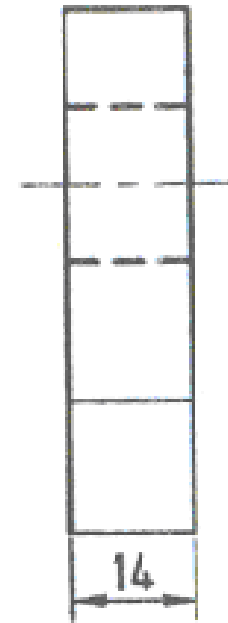


ISOMETRIC VIEW

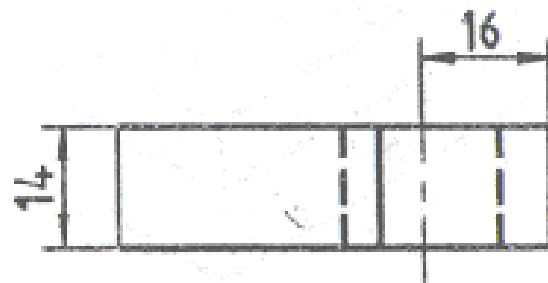




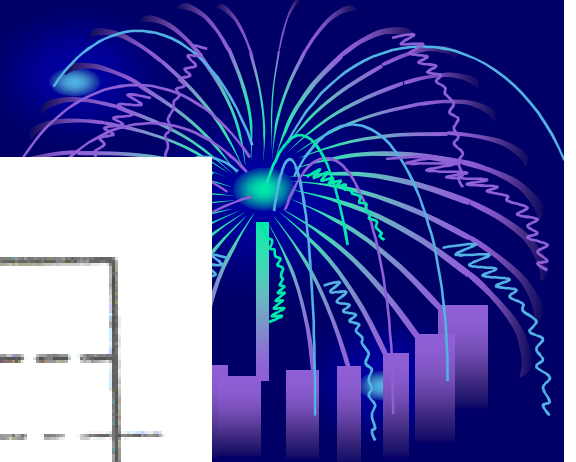
FRONT VIEW



LEFT SIDE VIEW

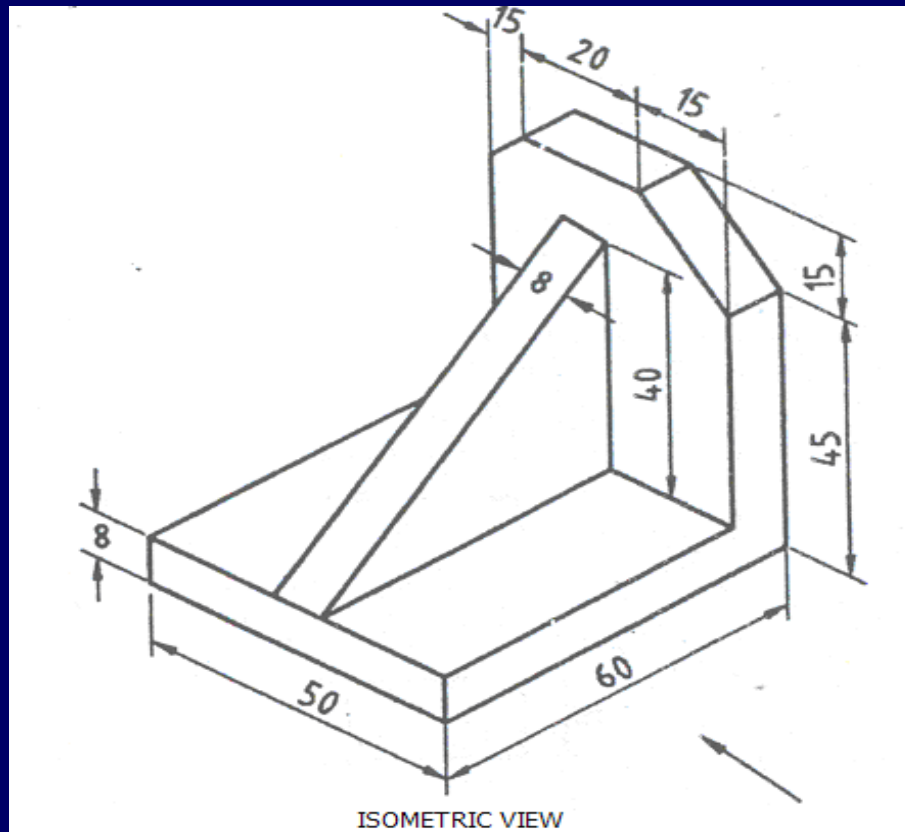


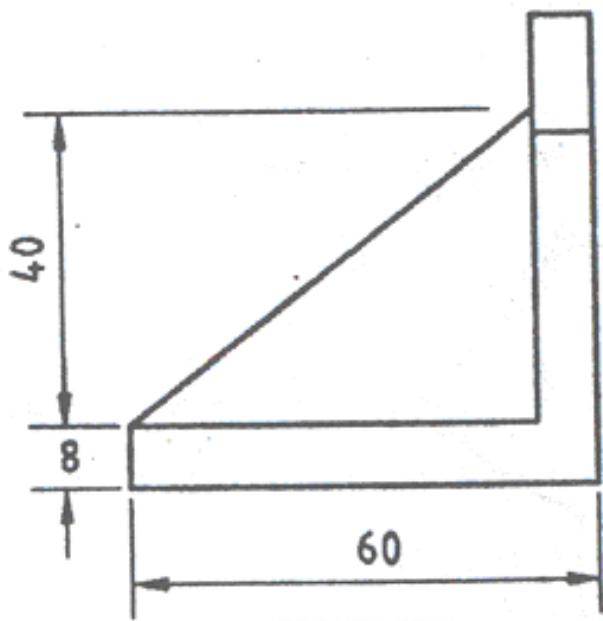
TOP VIEW



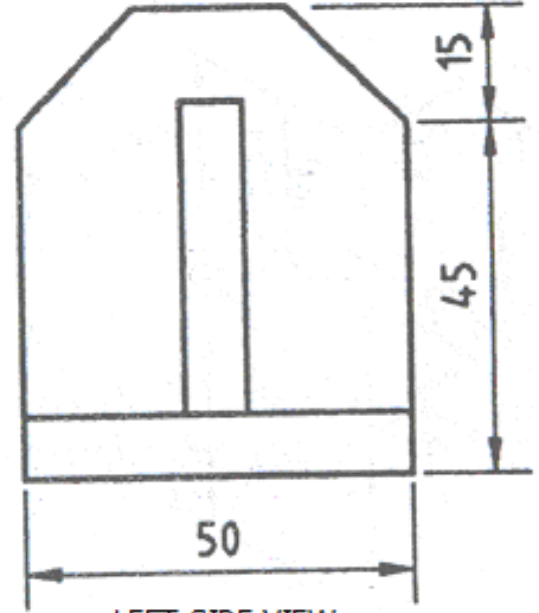
Problem - 6

Draw Front view, Top view, Left side view.

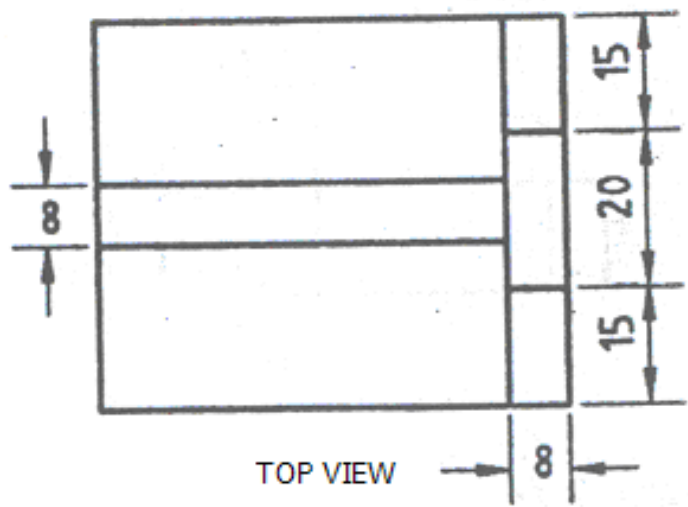




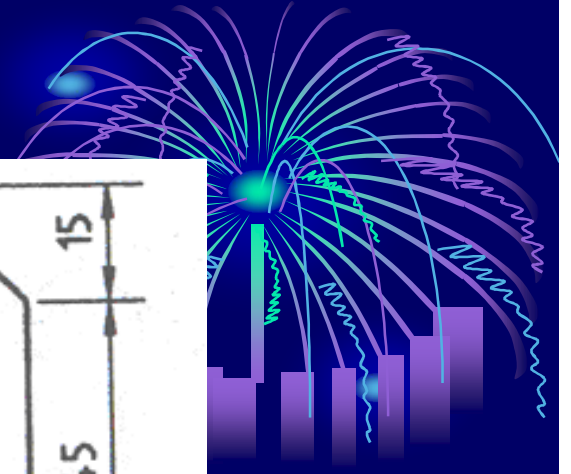
FRONT VIEW



LEFT SIDE VIEW



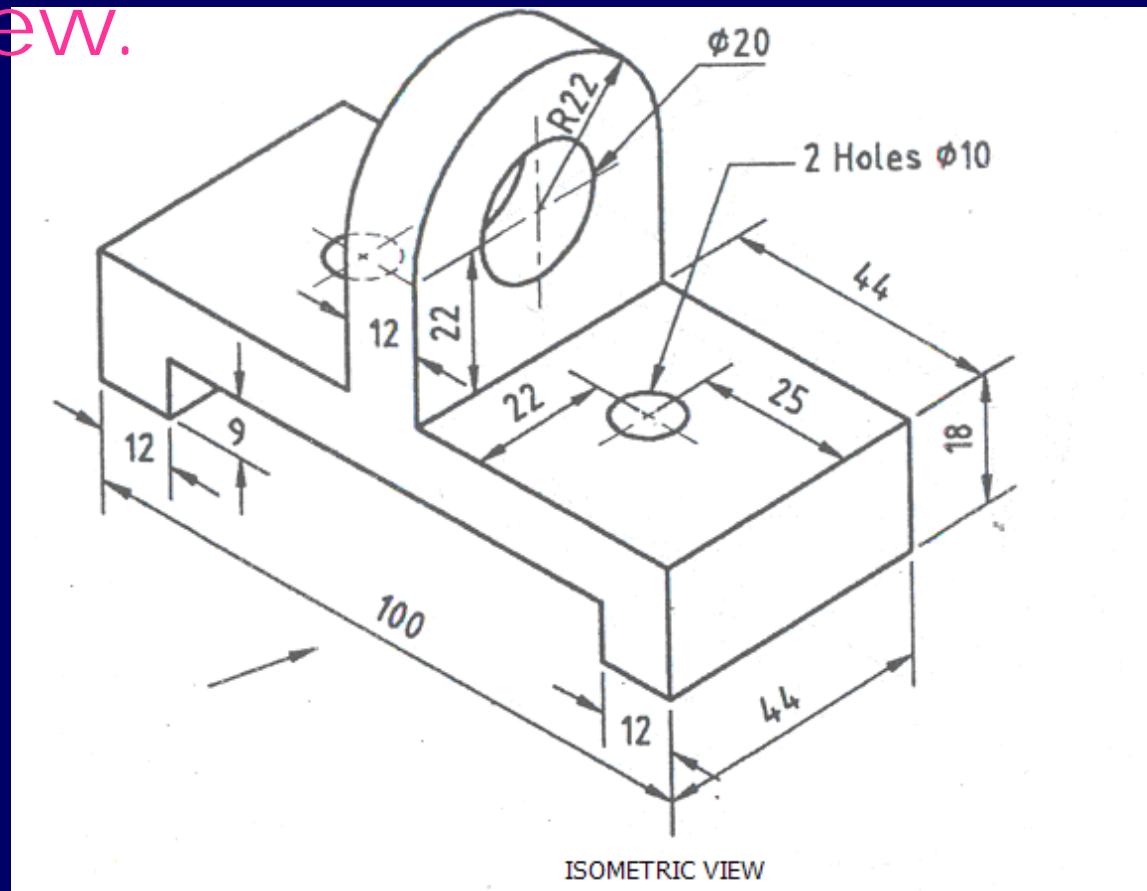
TOP VIEW



Problem - 7

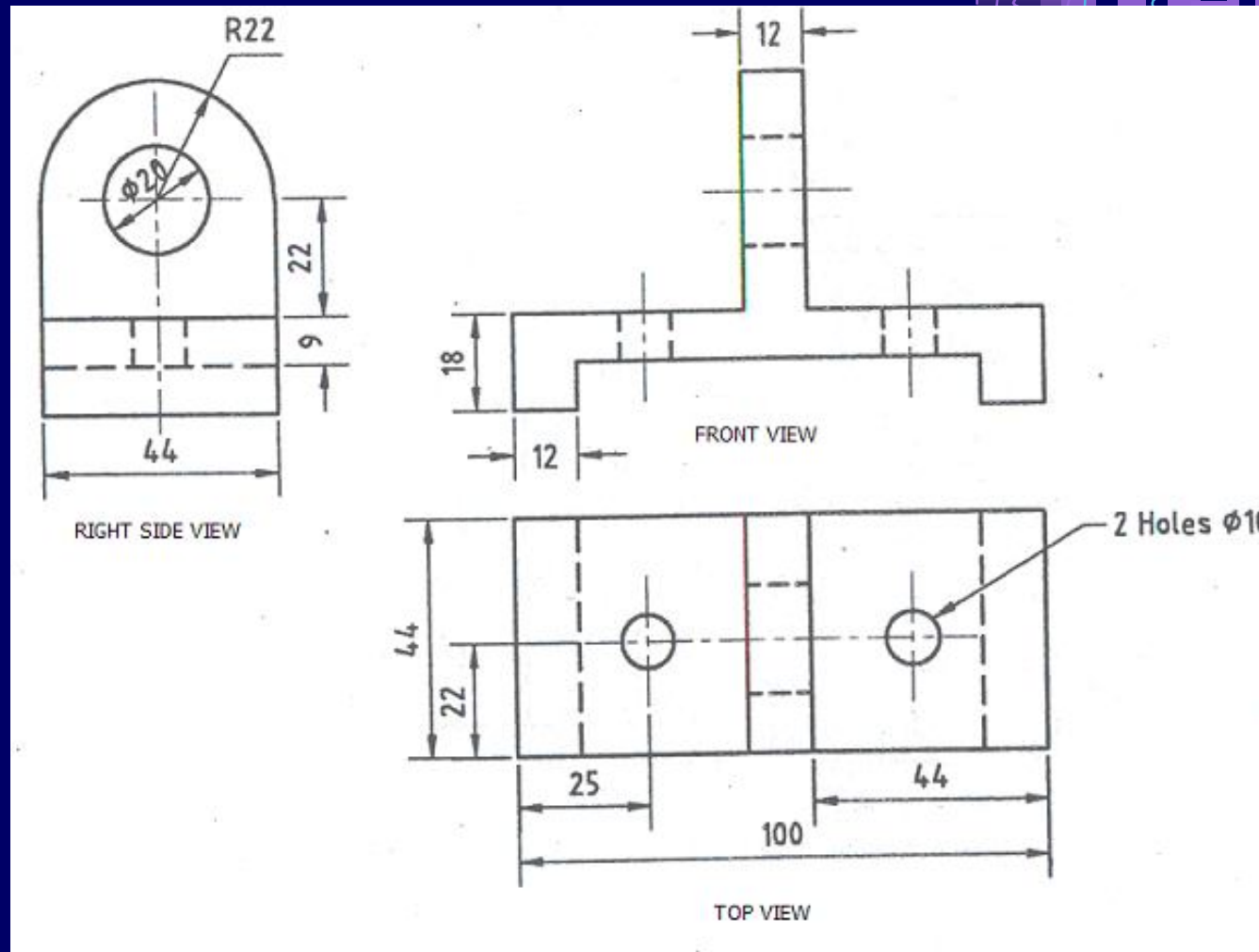
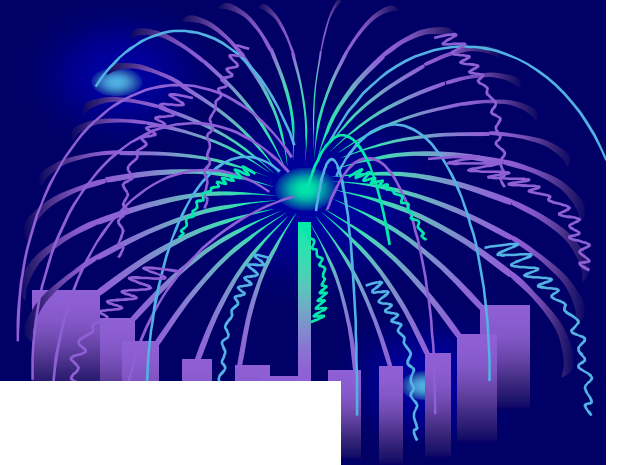
Question:

Draw Front view, Top view, Right side view.



Problem - 7

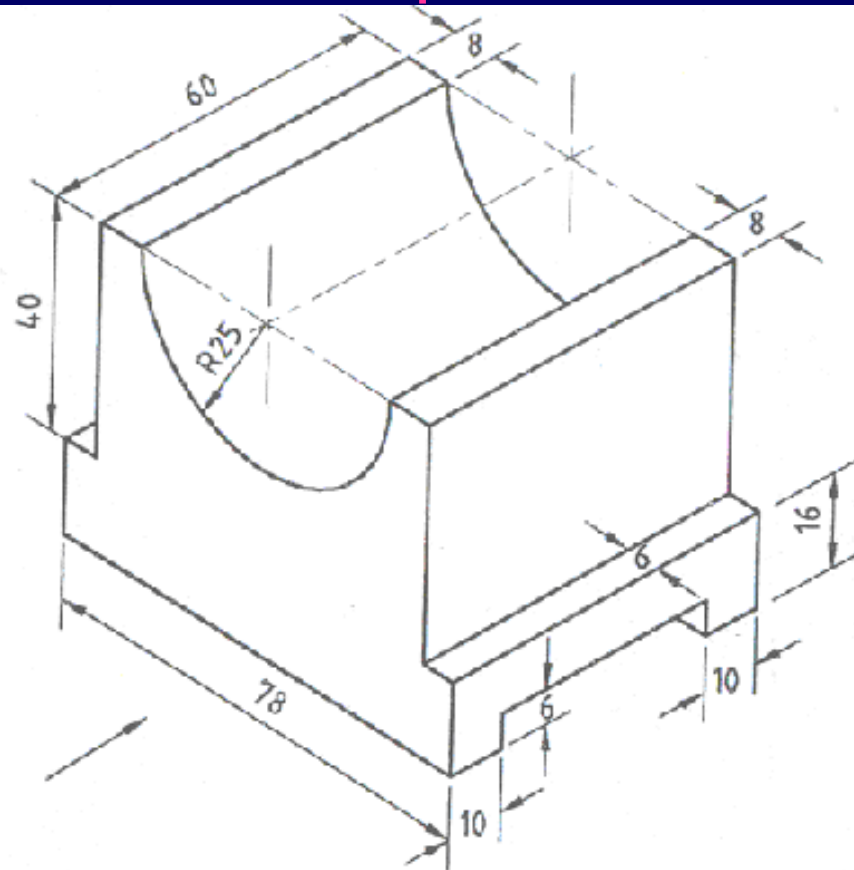
Solution



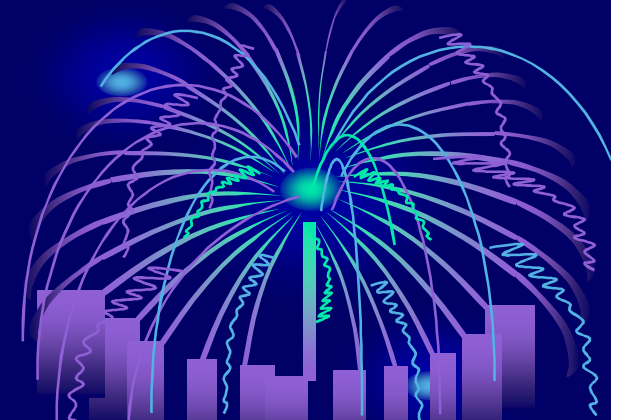
Problem – 8

Question

Draw Front view, Top view, Right side view.

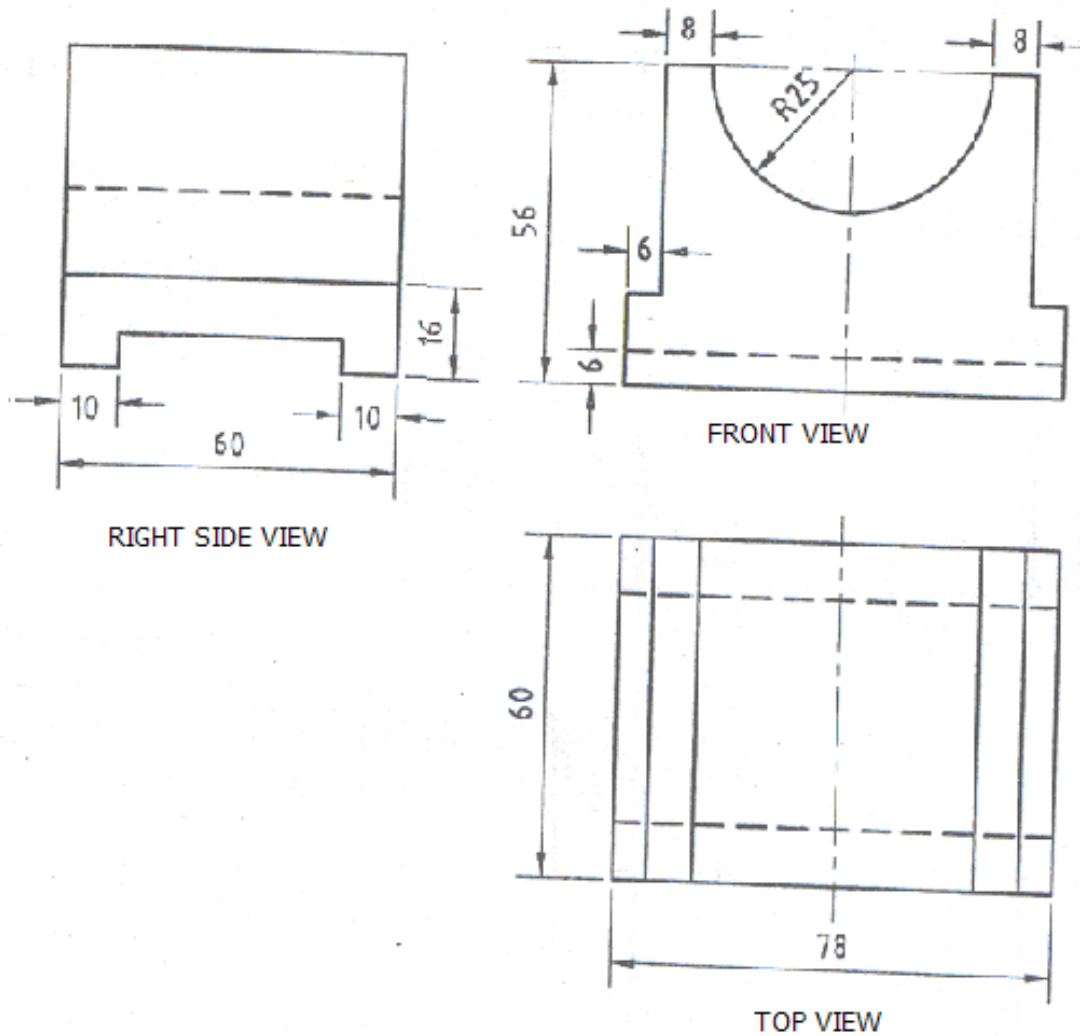


ISOMETRIC VIEW



Problem – 8

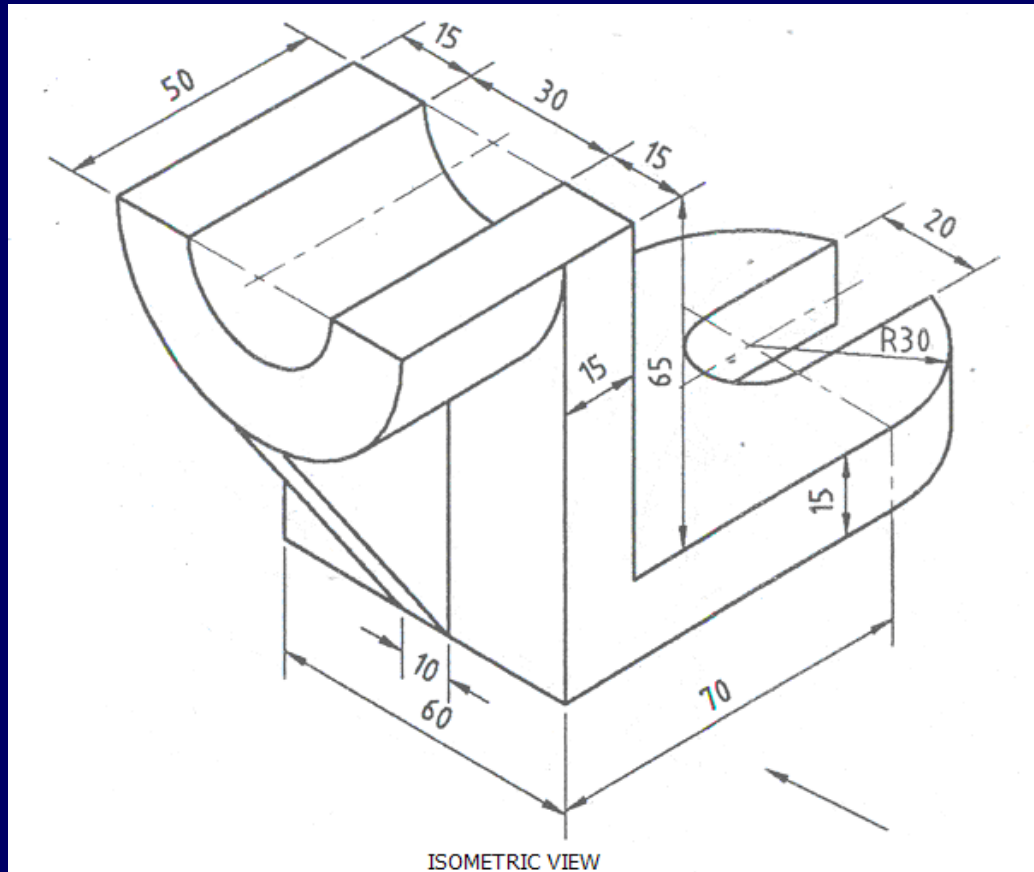
Solution



Problem – 9

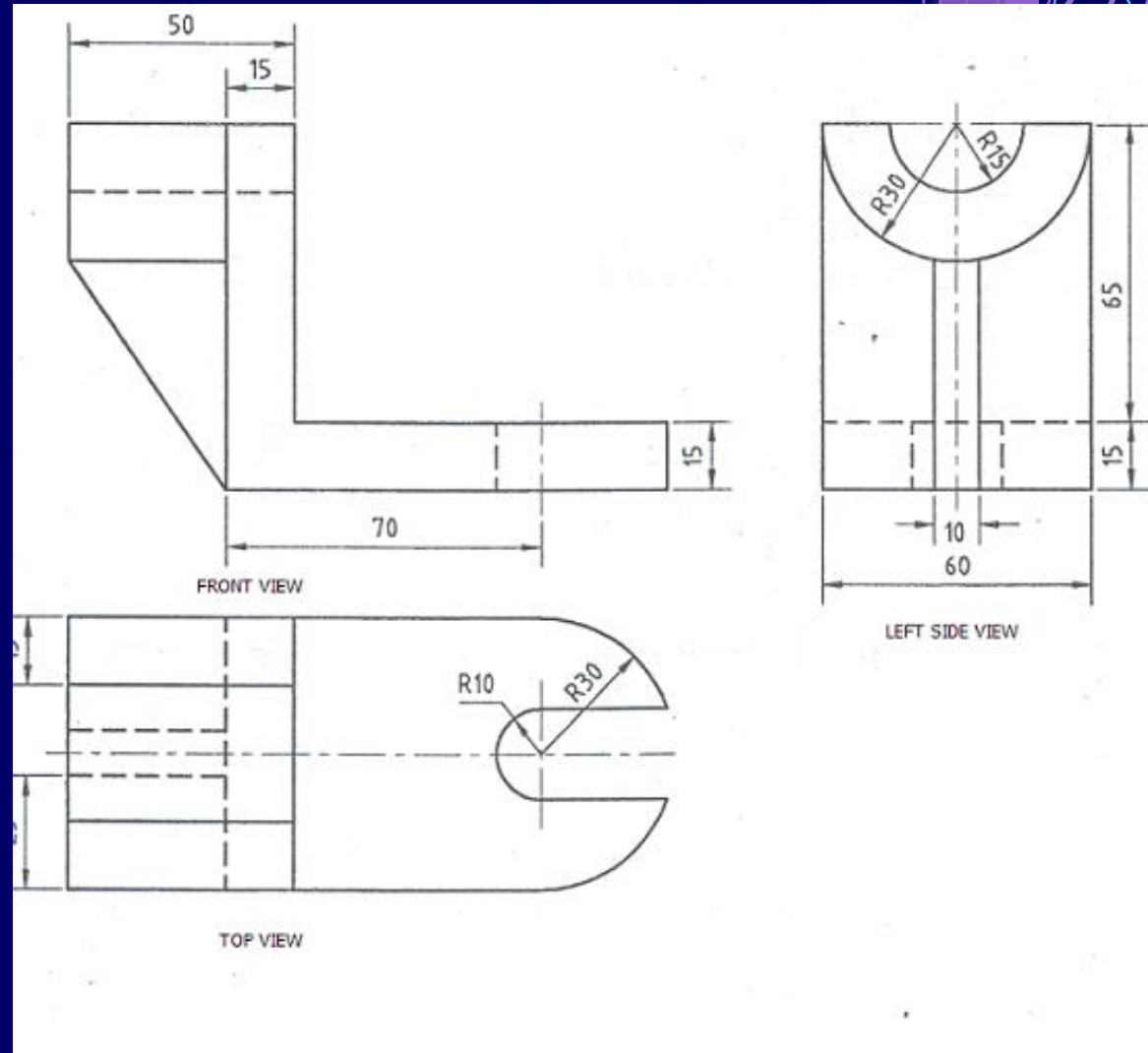
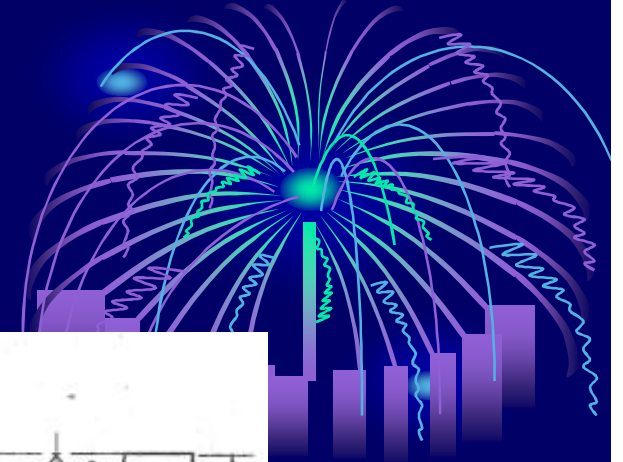
Question

Draw Front view, Top view, Left side view.



Problem - 9

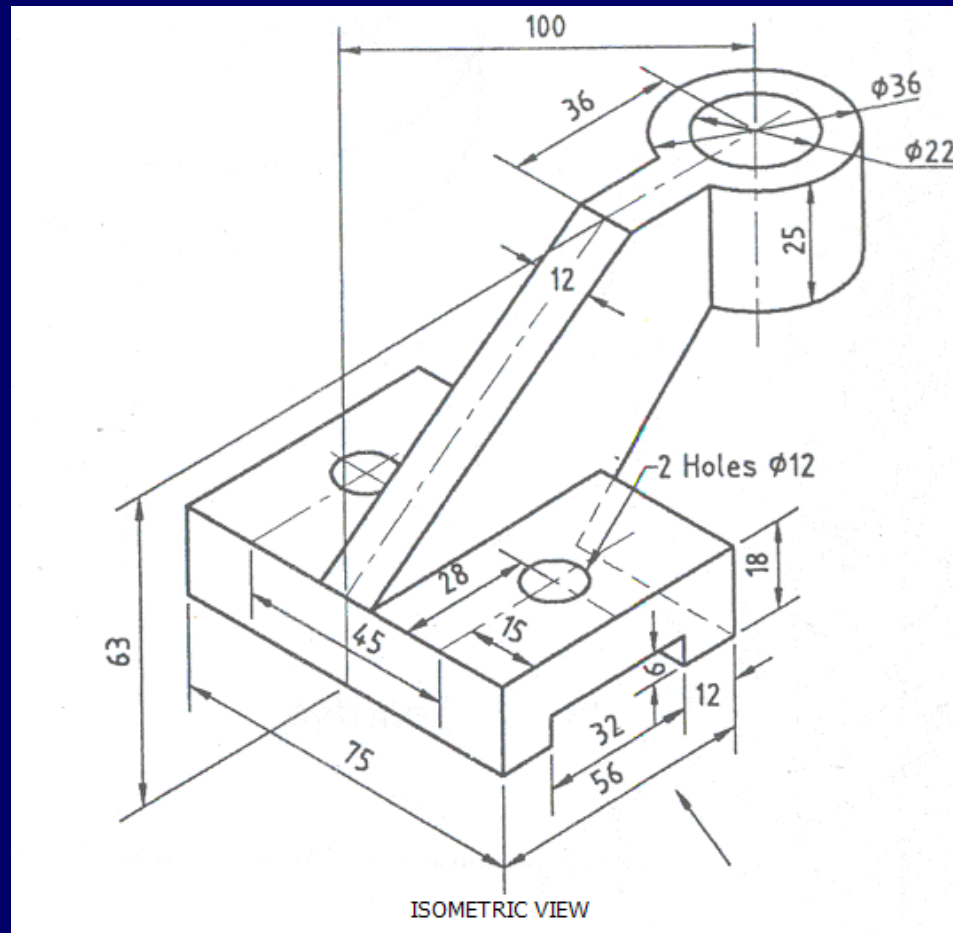
Solution



Problem – 10

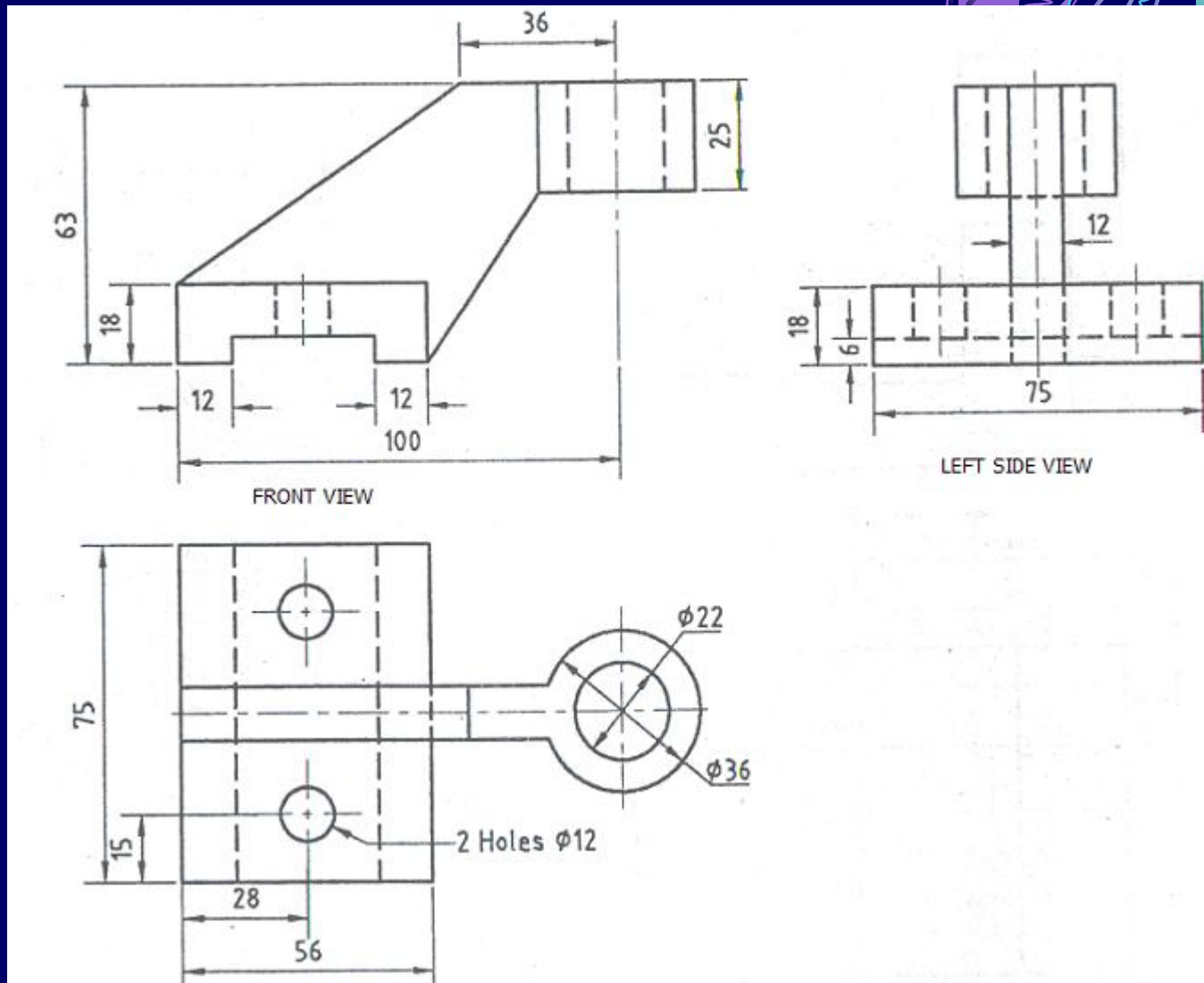
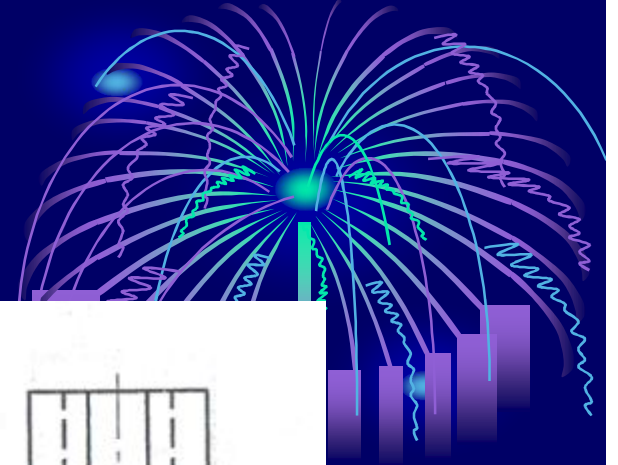
Question

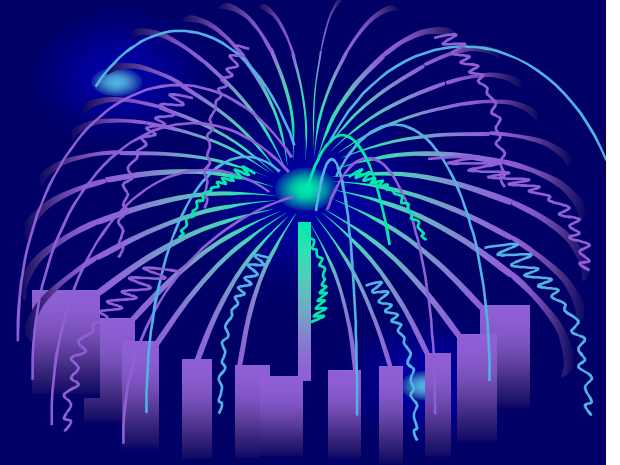
Draw Front view, Top view, Left side view.



Problem - 10

Solution





END