Isometric Views

Dr. Piyush Shakya
Associate Professor
Department of Mechanical Engineering
Indian Institute of Technology Madras, Chennai

Introduction

ISOMETRIC PROJECTION IS A TYPE OF PICTORIAL PROJECTION IN WHICH THE THREE DIMENSIONS OF A SOLID ARE NOT ONLY SHOWN IN ONE VIEW BUT THEIR ACTUAL SIZES CAN BE MEASURED DIRECTLY FROM IT.

CHAROTAR

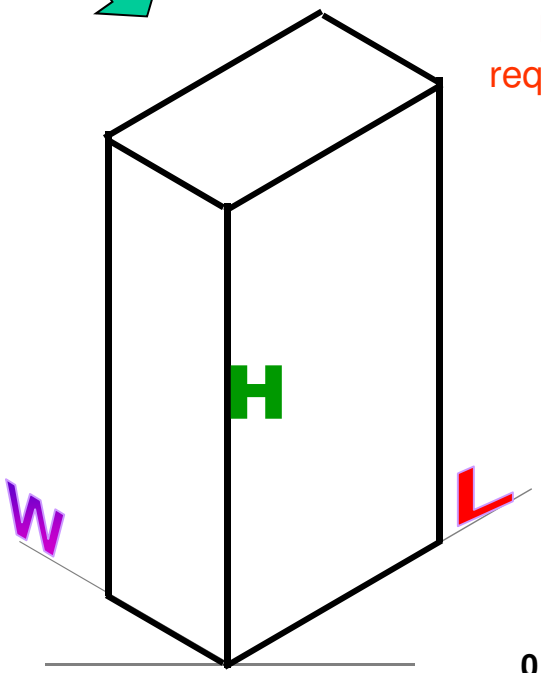
Fullscreen ON/OFF

Cognifront®

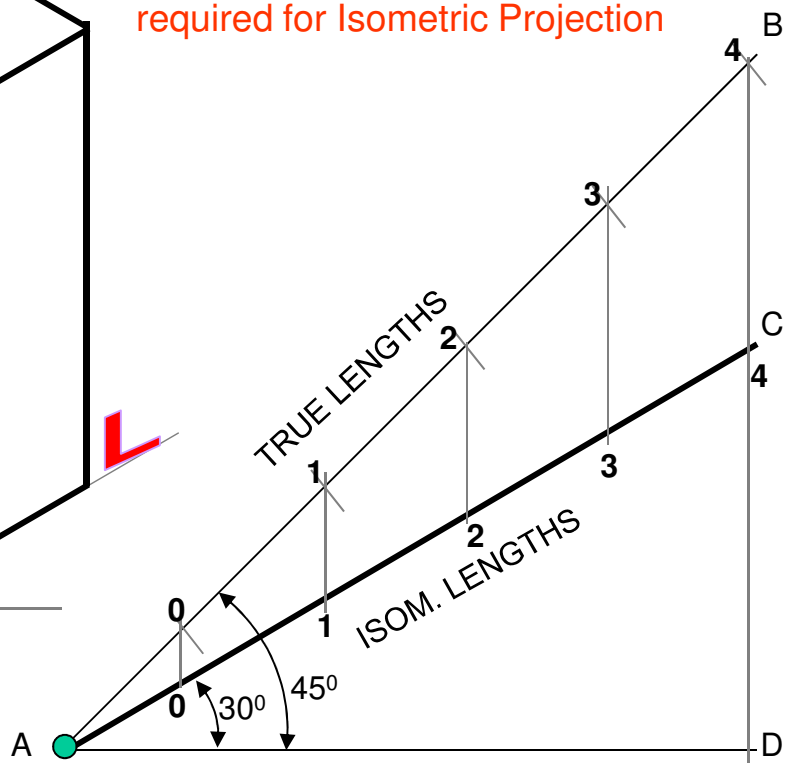
Type of Isometric Drawings

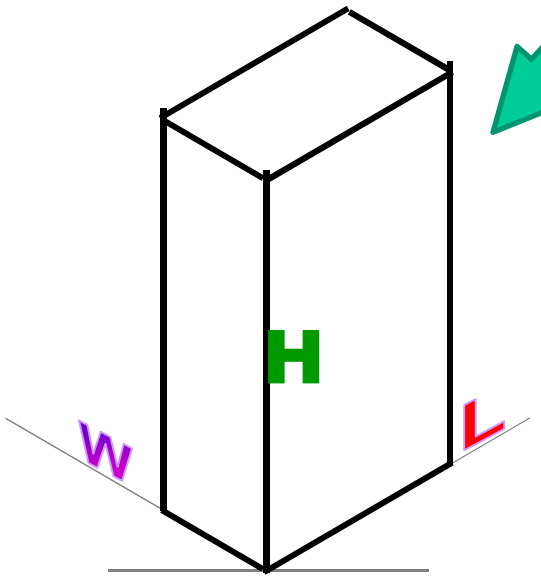
ISOMETRIC VIEW
Drawn by using True scale
(**True dimensions**)

ISOMETRIC PROJECTION
Drawn by using Isometric scale
(**Reduced dimensions**)



Isometric scale [Line AC]
required for Isometric Projection





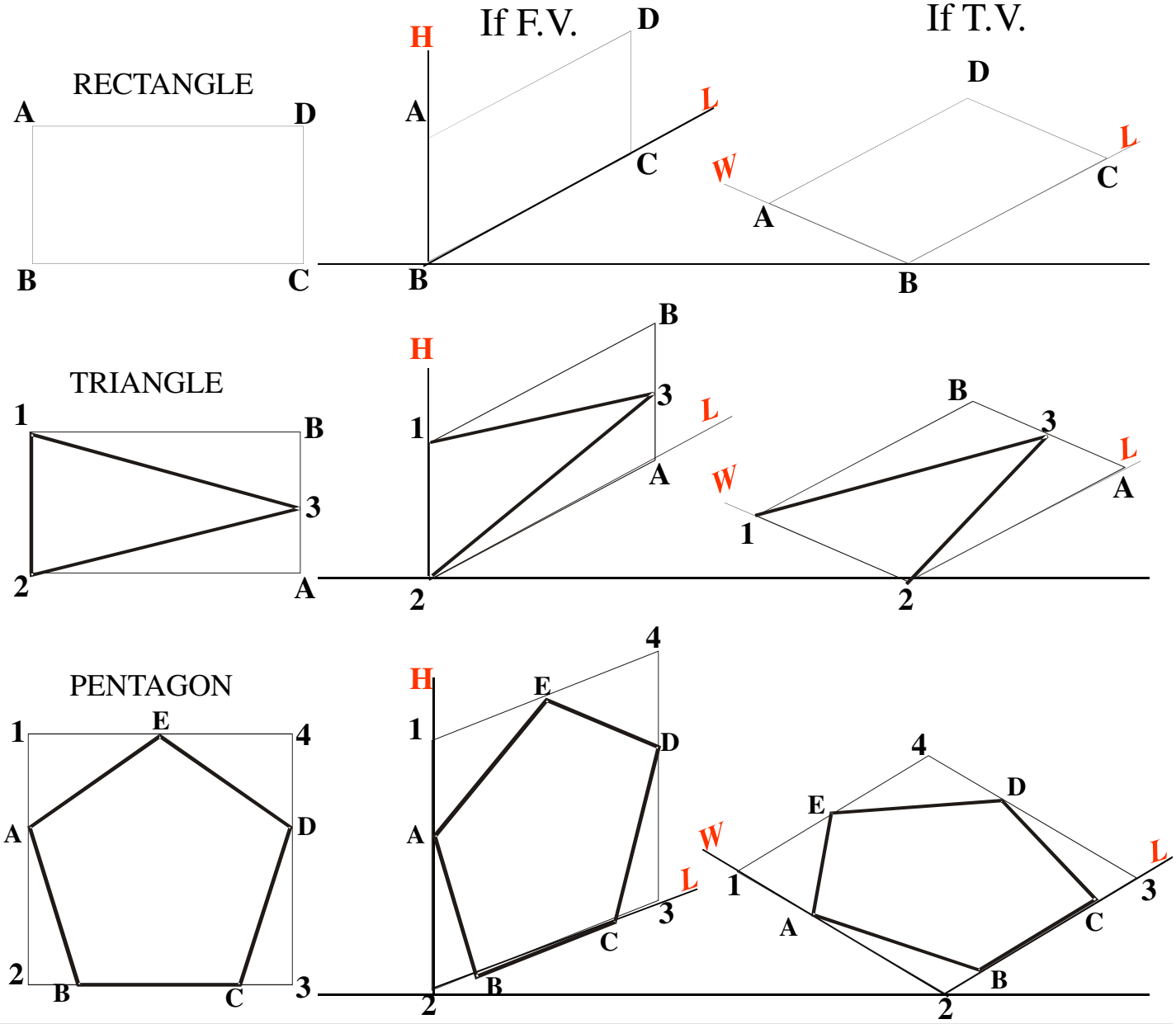
Methods of drawing non-isometric lines

1. Box Method: The object is assumed to be enclosed in a rectangular box. Initially, the box is drawn in isometric and then the ends of the lines are drawn from the reference of the outline of the box.

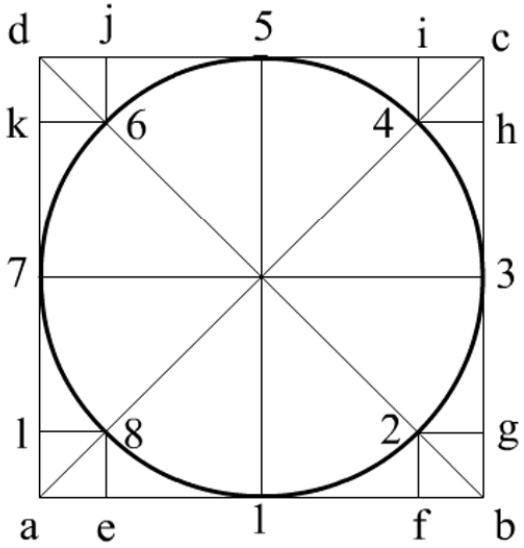
2. Co-ordinate or Offset Method: Neither the lines, nor their ends lie in the isometric plane. Perpendiculars are dropped from each end of the edge to a horizontal or vertical reference plane. The points at which the perpendiculars meet the plane, are located by drawing co-ordinates or offsets to the edges of the plane.

Isometric (Plane figure) in F.V. and T.V.

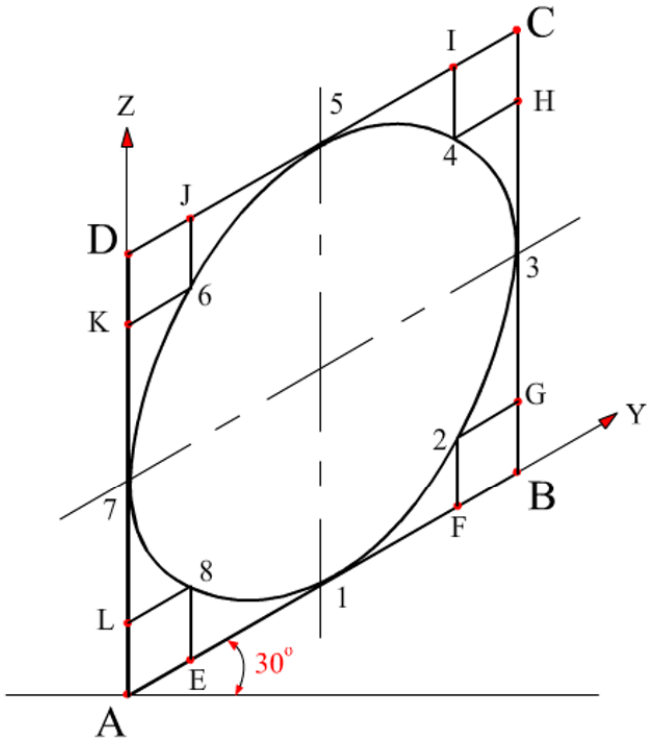
Box Method:
First draw the isometric of enclosing rectangle and then inscribe the shape as it is.



Offset Method (Circle)

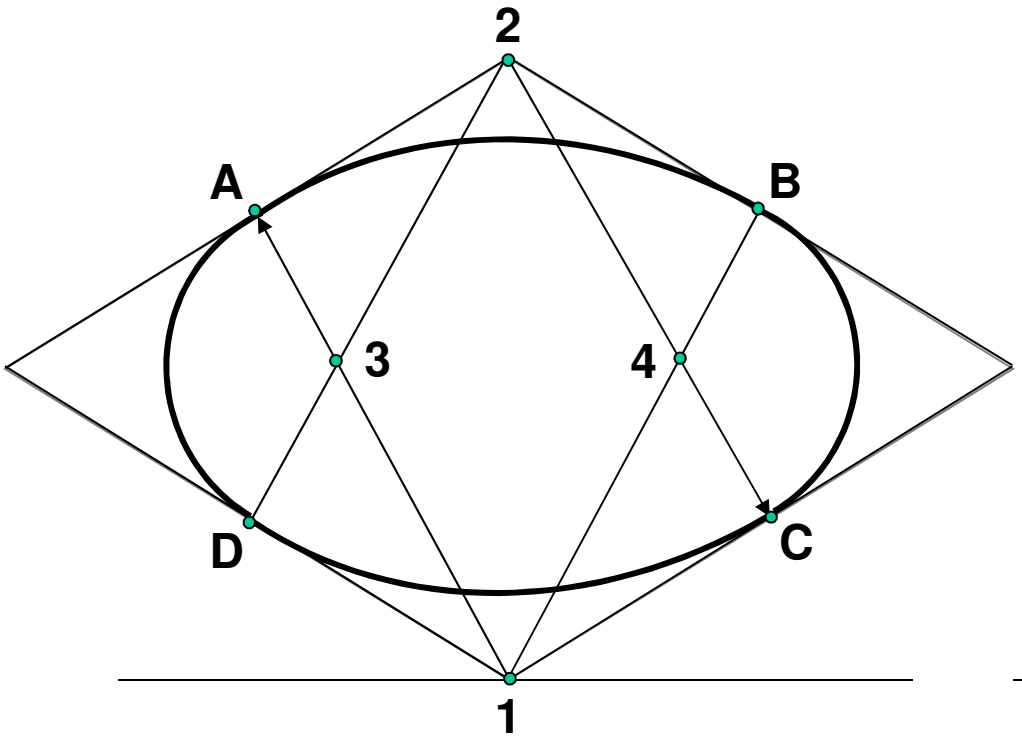


Circle

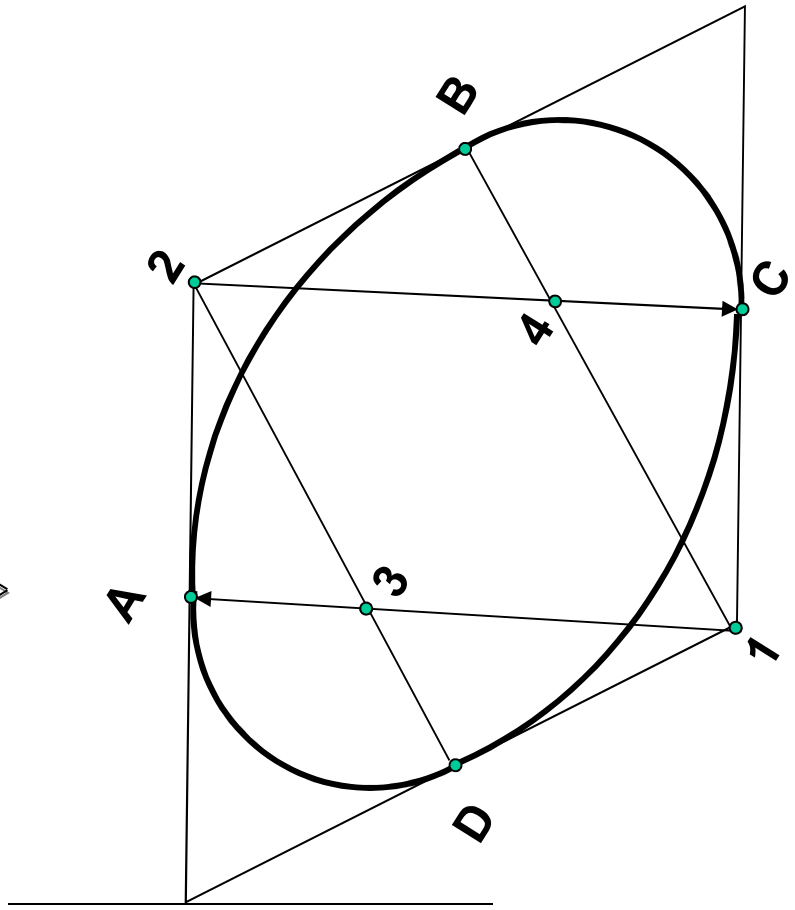


Four Center Method (Circle)

If Top View

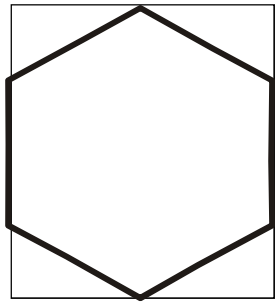


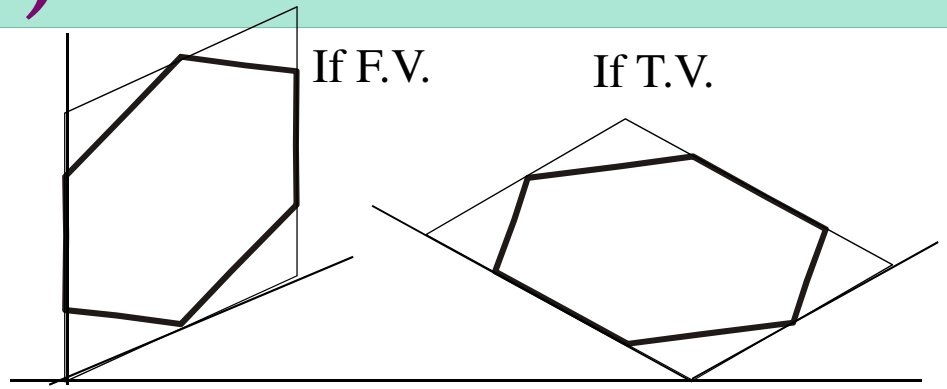
If Front View



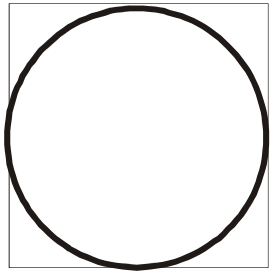
Isometric (Plane figure) in F.V. and T.V.

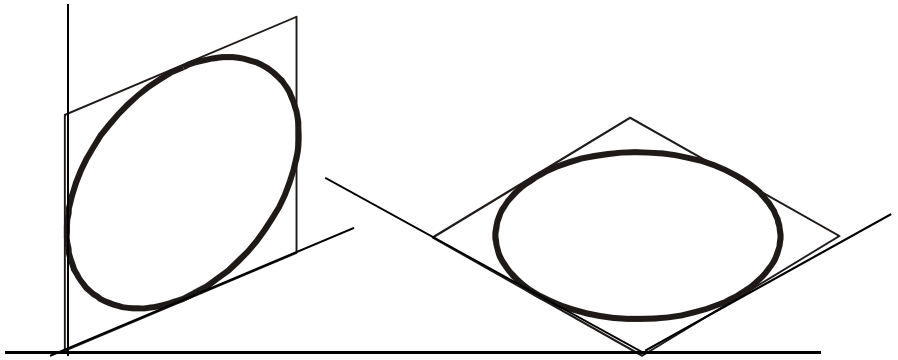
HEXAGON





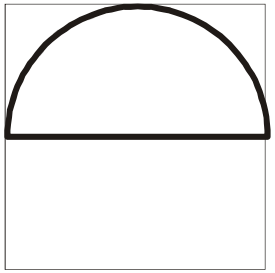
CIRCLE

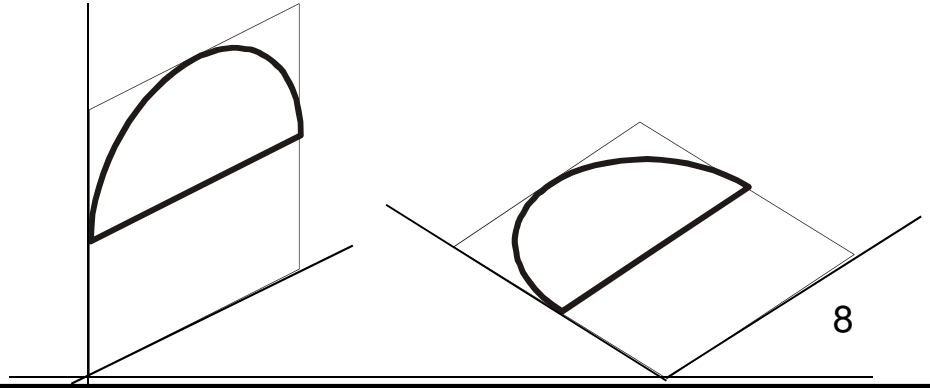




For Isometric of Circle/Semicircle use Offset/ four-center method.

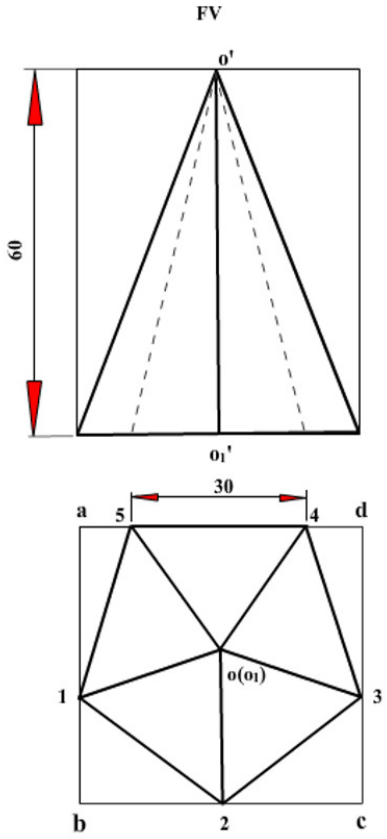
SEMI CIRCLE



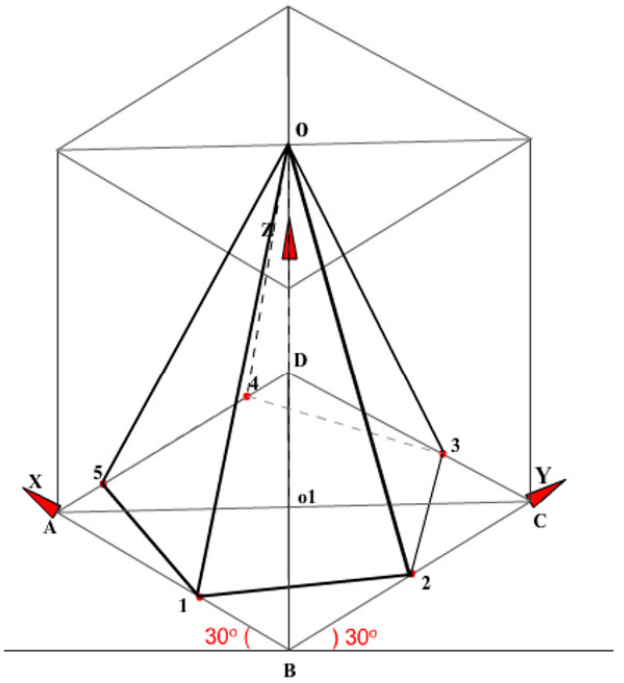


Solid Object (Pentagonal Pyramid)

Box Method



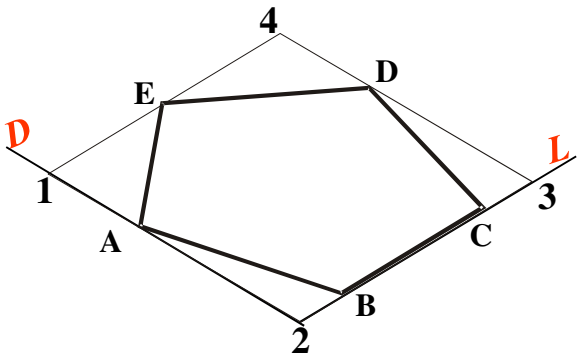
TV

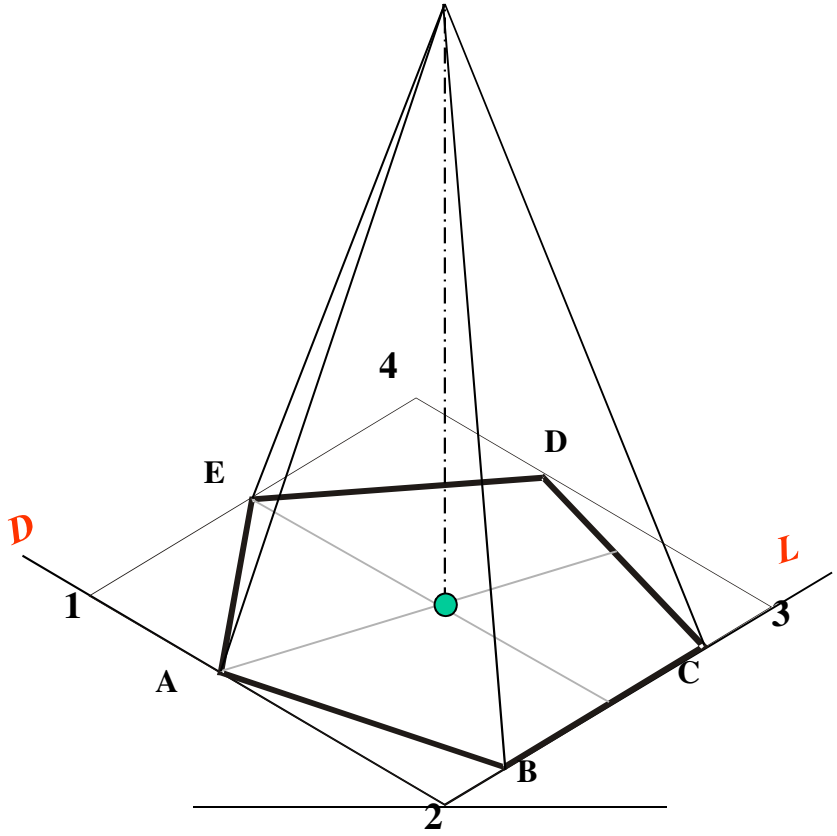


ISOMETRIC VIEW OF PENTAGONAL PYRAMID

Solid Object (Pentagonal Pyramid)

Co-ordinate or Offset Method

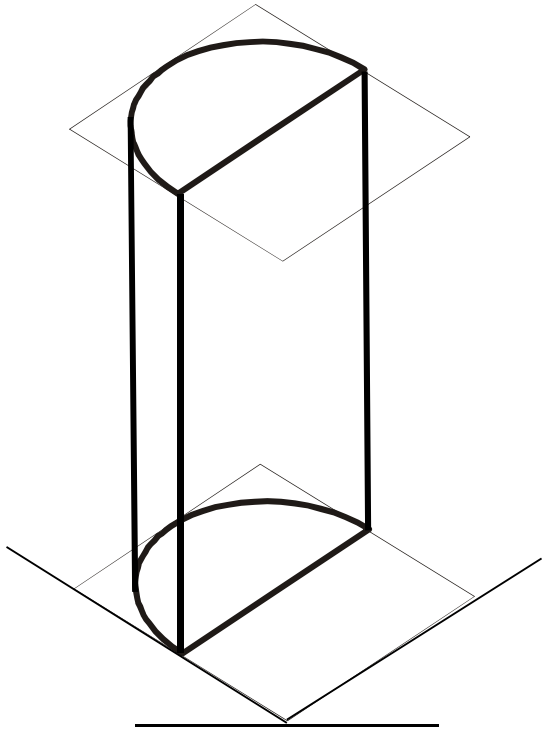


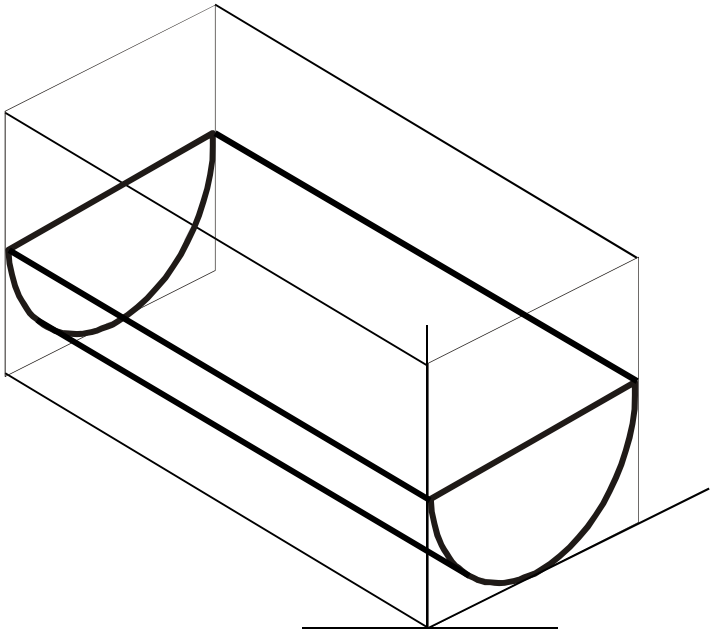


Solid Object (Half Cylinder)

STANDING ON H.P.

(On its Semicircular Base)

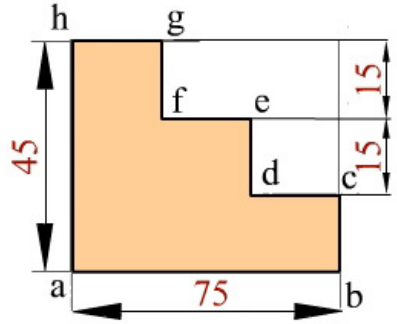




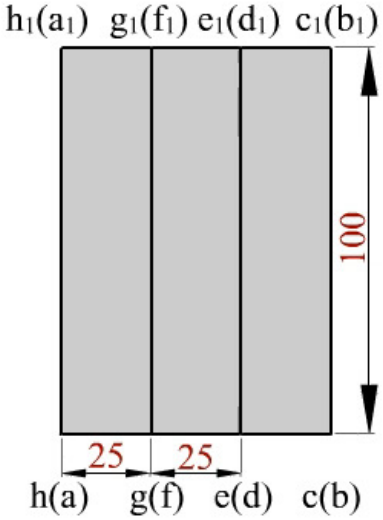
LYING ON H.P.

(with flat face ‖ to H.P.)

Step Problem

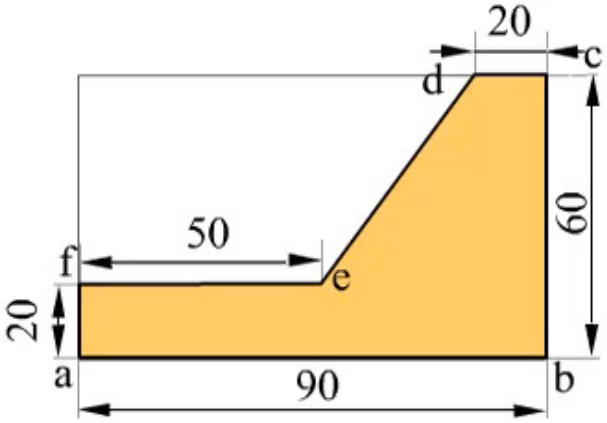


FV

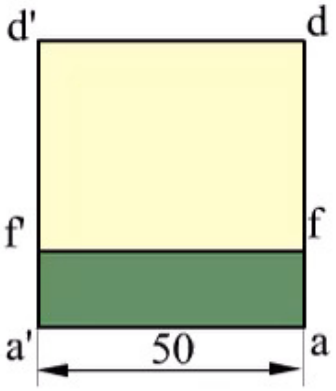


TV

Object 1

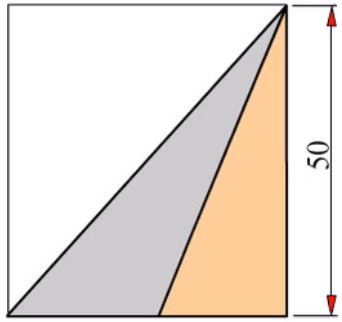


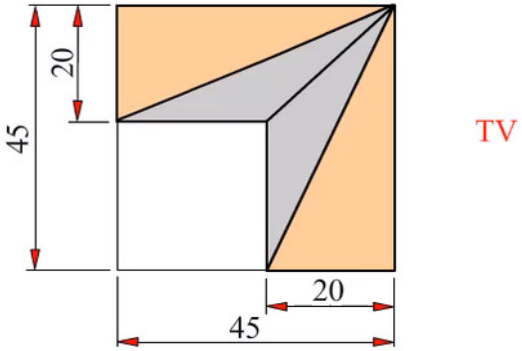
FV



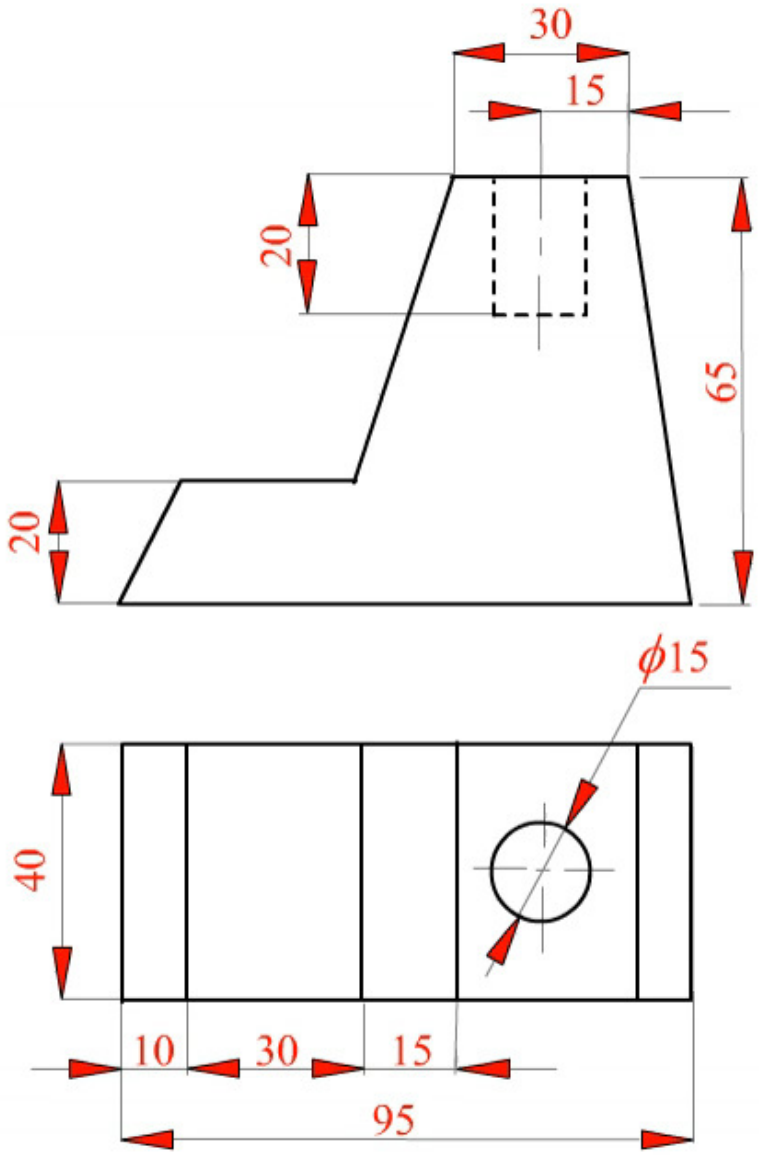
LSV

Object 2



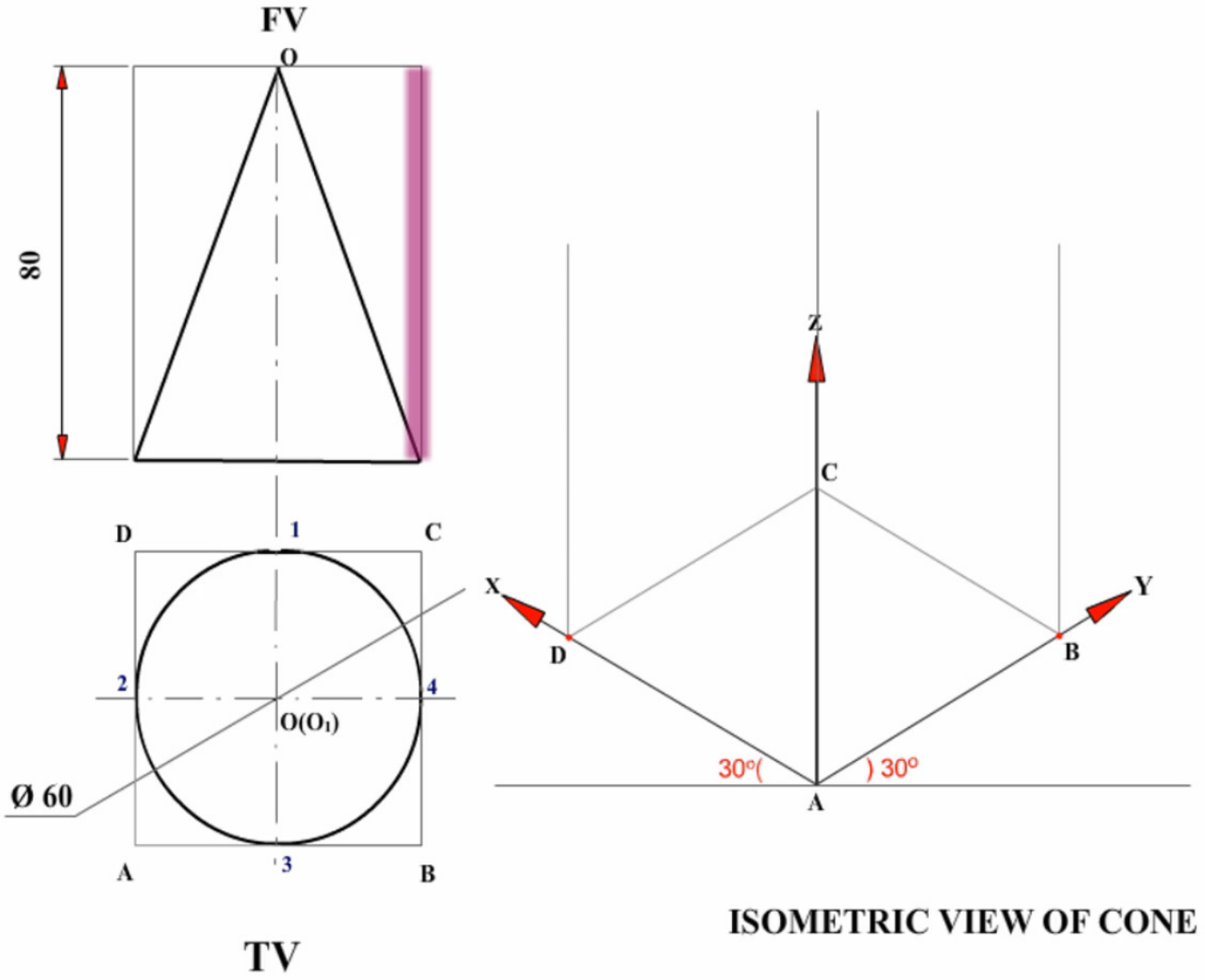


Object 3



ISOMETRIC VIEW

Cone Problem



Thank you