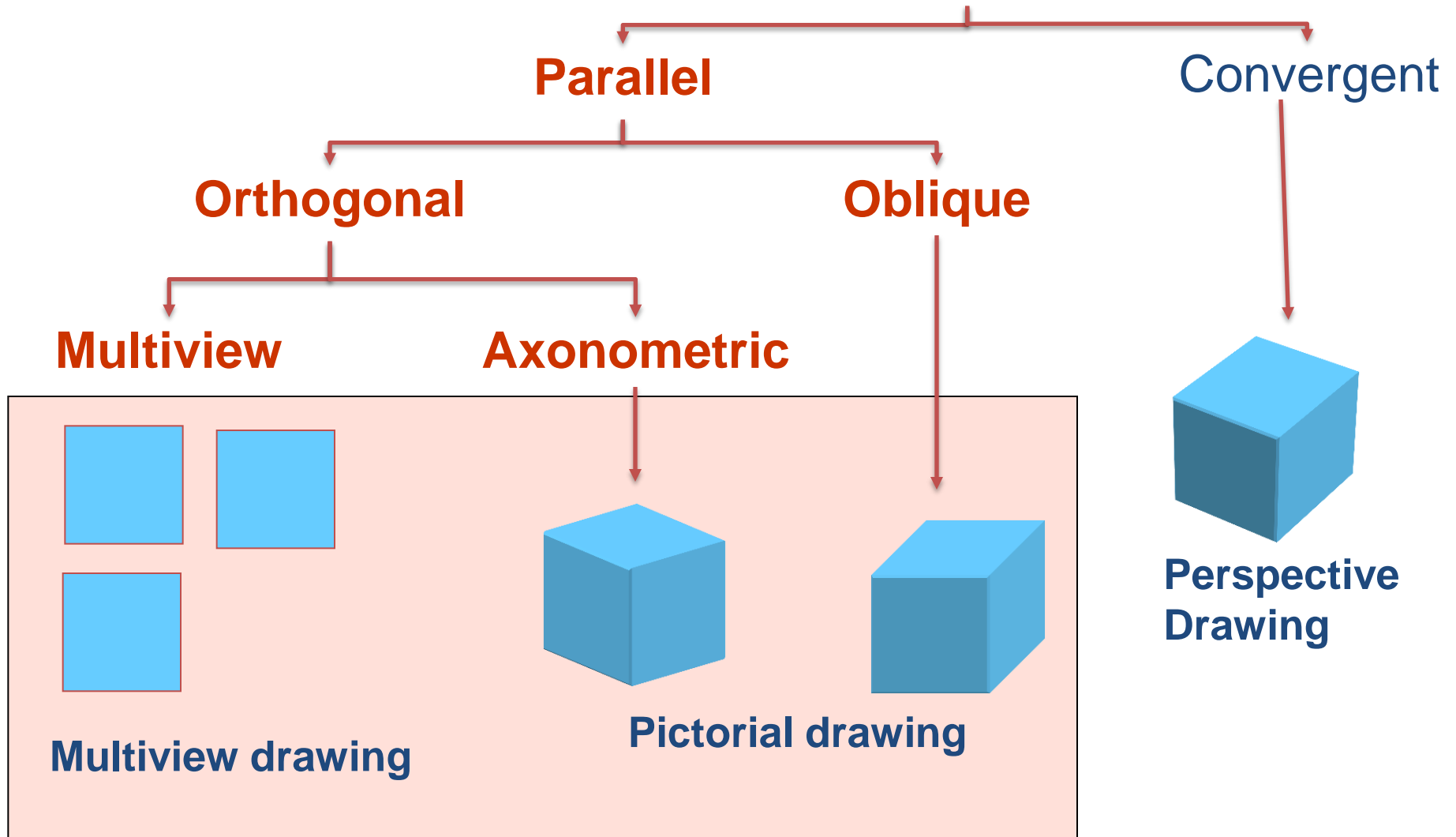


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

PROJECTION CLASSIFICATION

Projections



Parallel

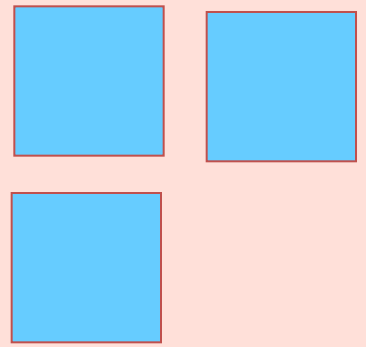
Convergent

Orthogonal

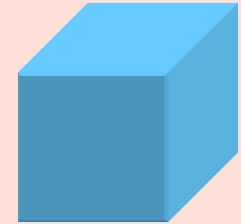
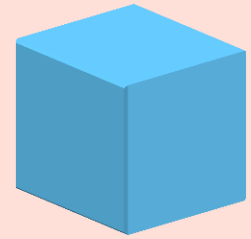
Oblique

Multiview

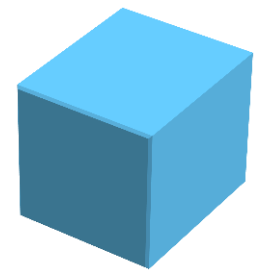
Axonometric



Multiview drawing



Pictorial drawing



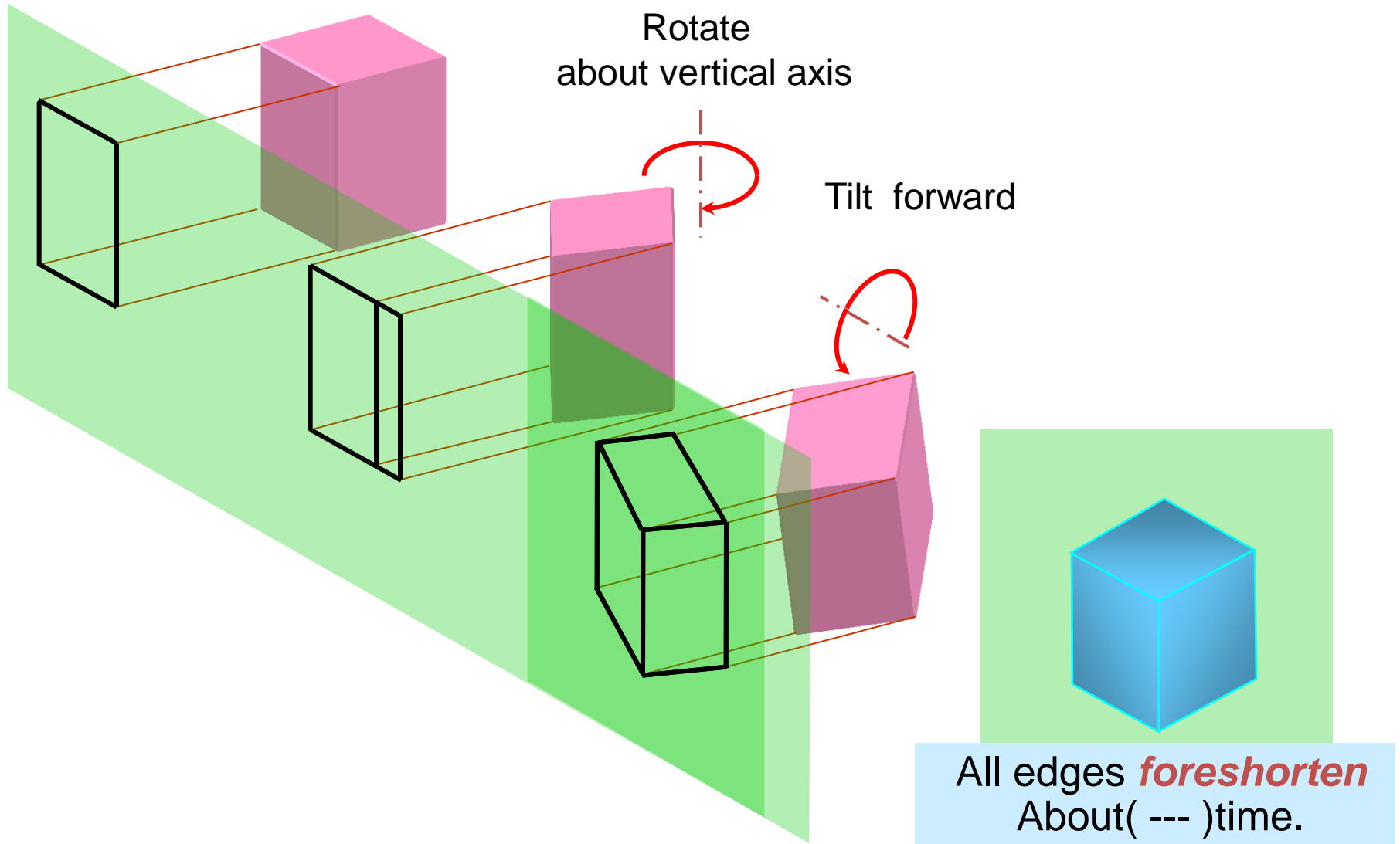
Perspective Drawing

Axonometric Drawing

Defintion

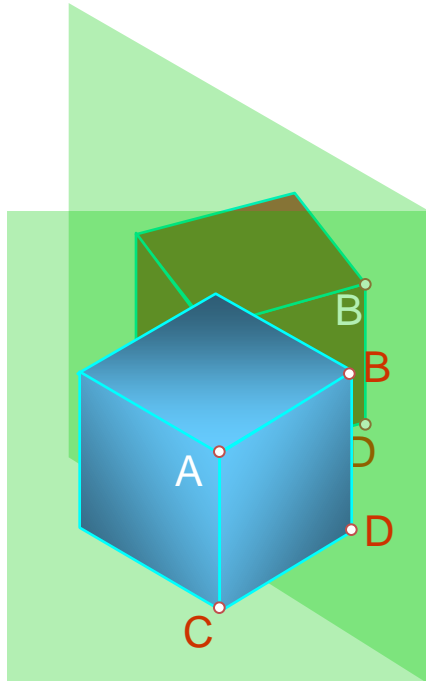
It is show the three principal dimensions of an object in one view.

Axonometric Projection

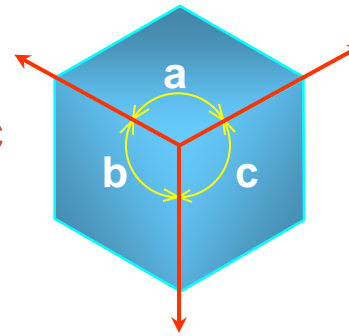


Axonometric Projection

Type of axonometric drawing



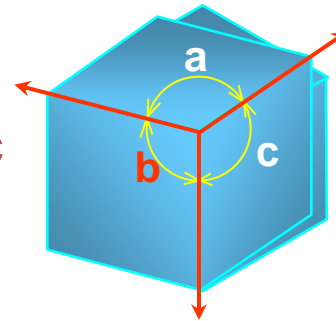
1. Isometric



Axonometric axis

All angles are equal.

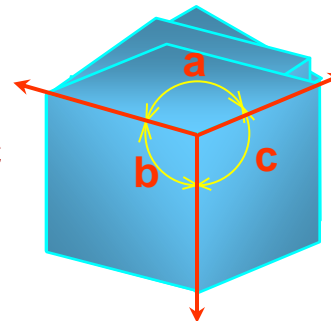
2. Dimetric



Axonometric axis

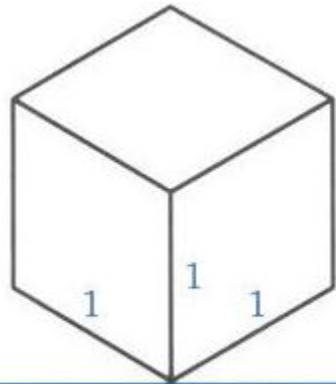
Two angles are equal.

3. Trimetric

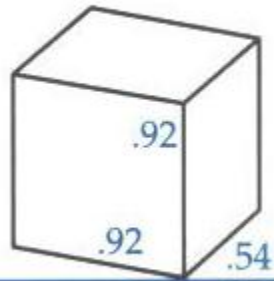


Axonometric axis

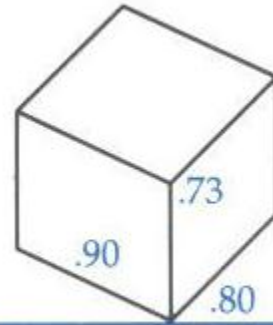
None of angles are equal.



Isometric

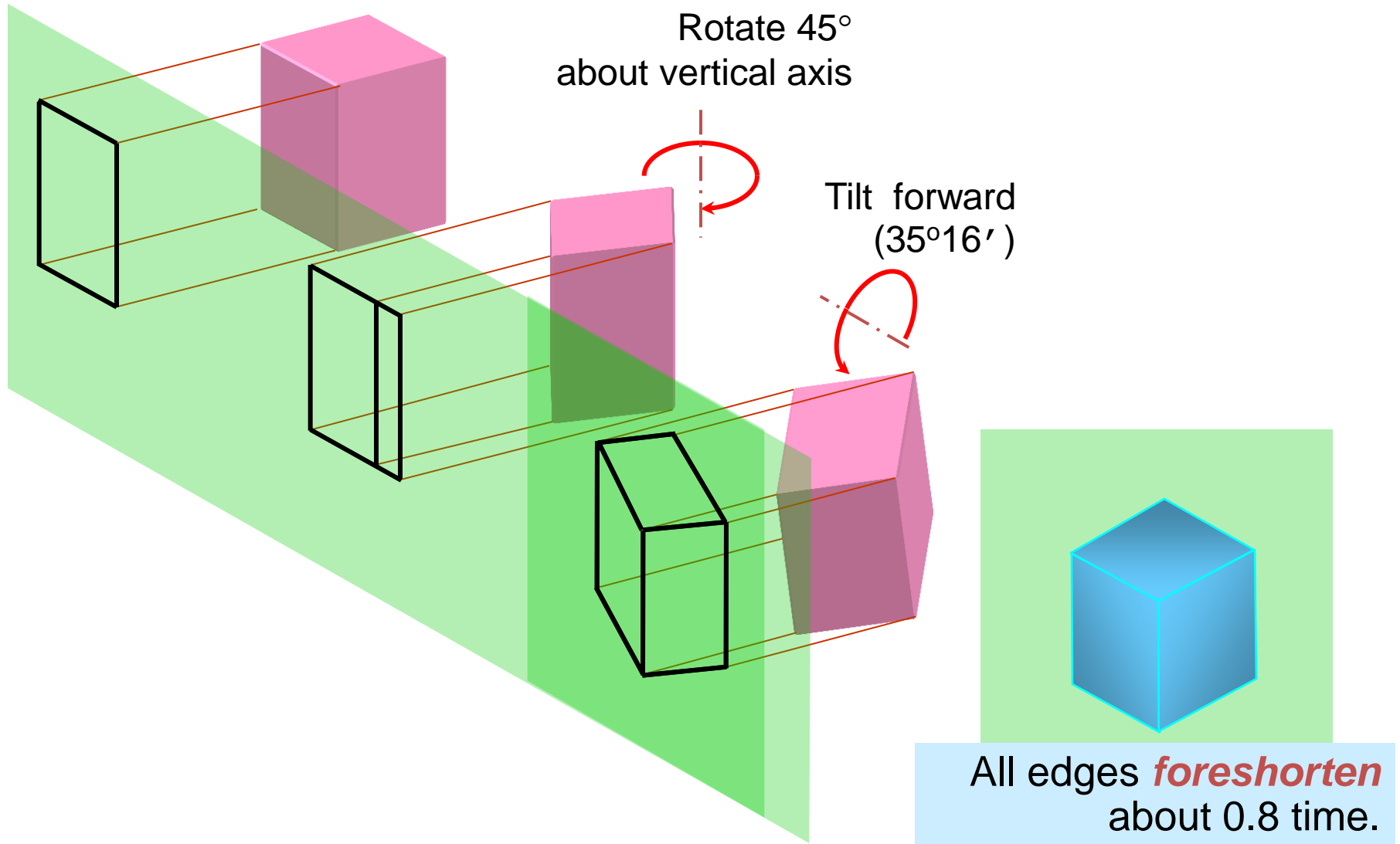


Dimetric



Trimetric

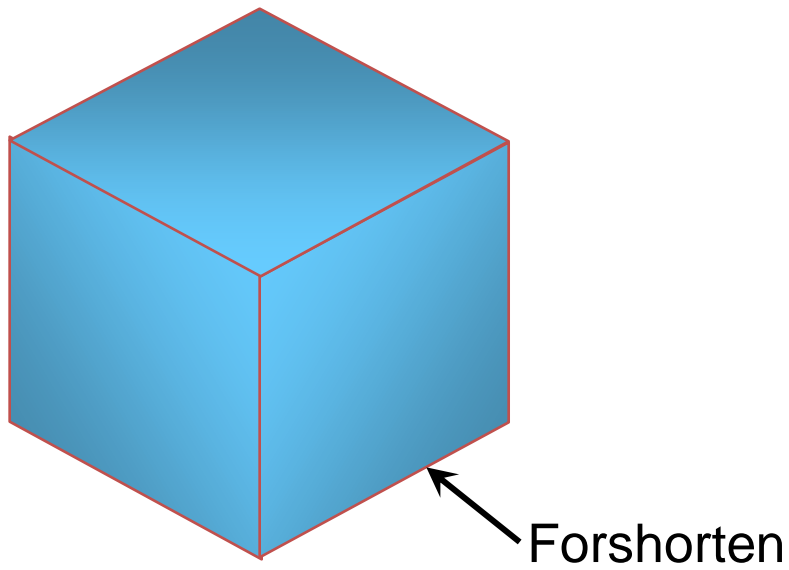
Isometric Projection



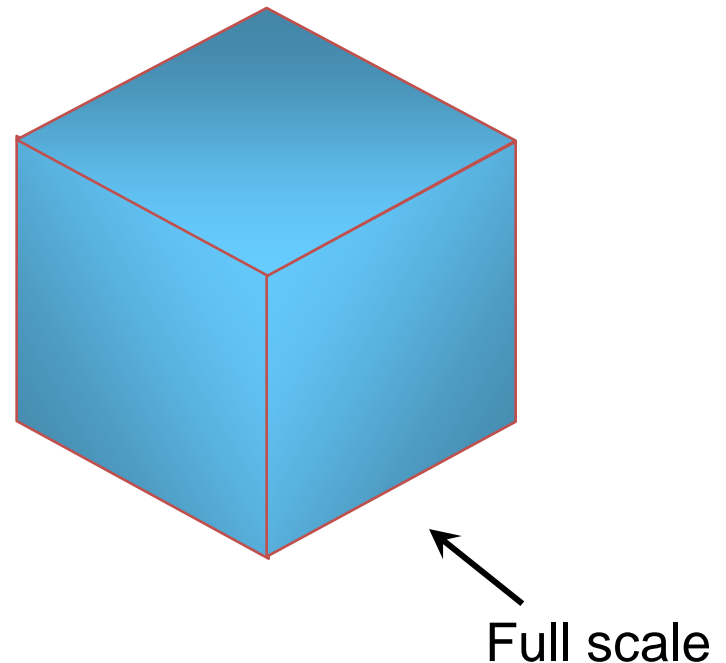
Isometric Drawing

Isometric drawing is a drawing drawn on an isometric axes using *full scale*.

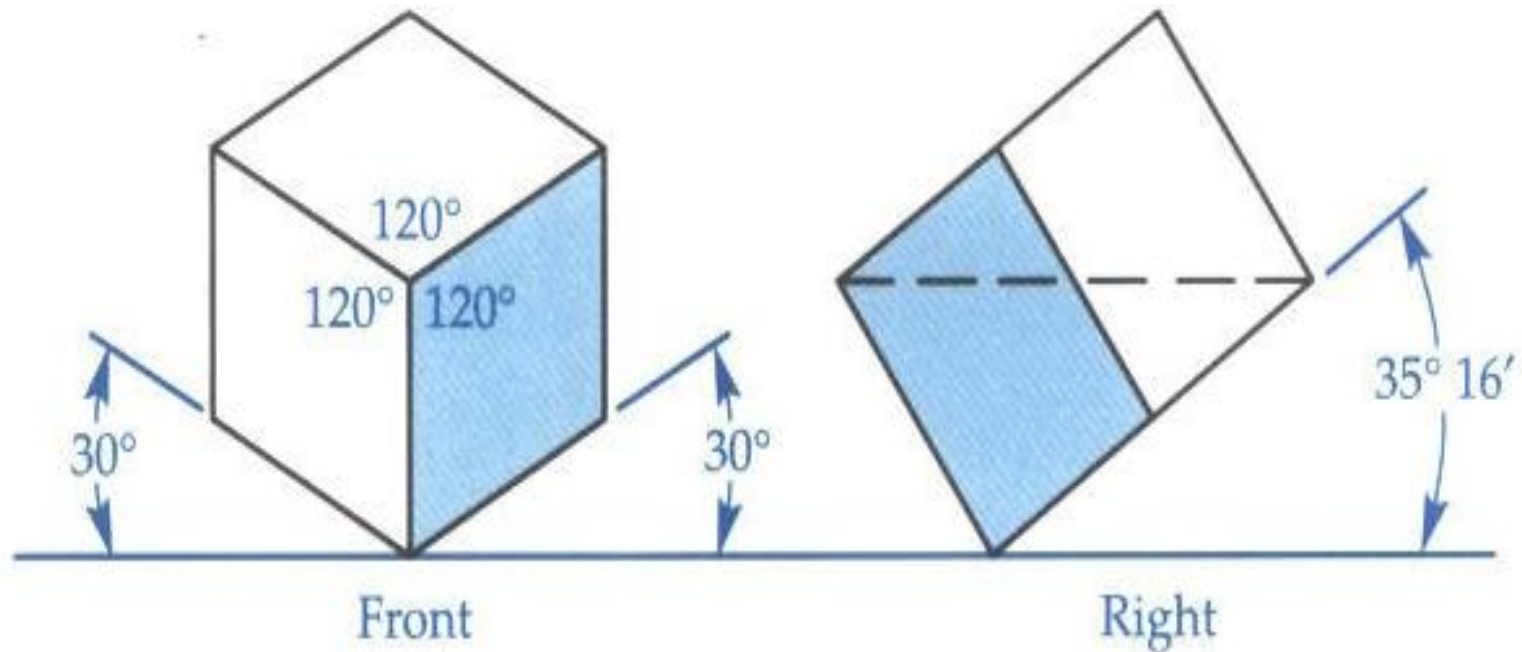
Isometric projection
(True projection)



Isometric drawing
(Full scale)

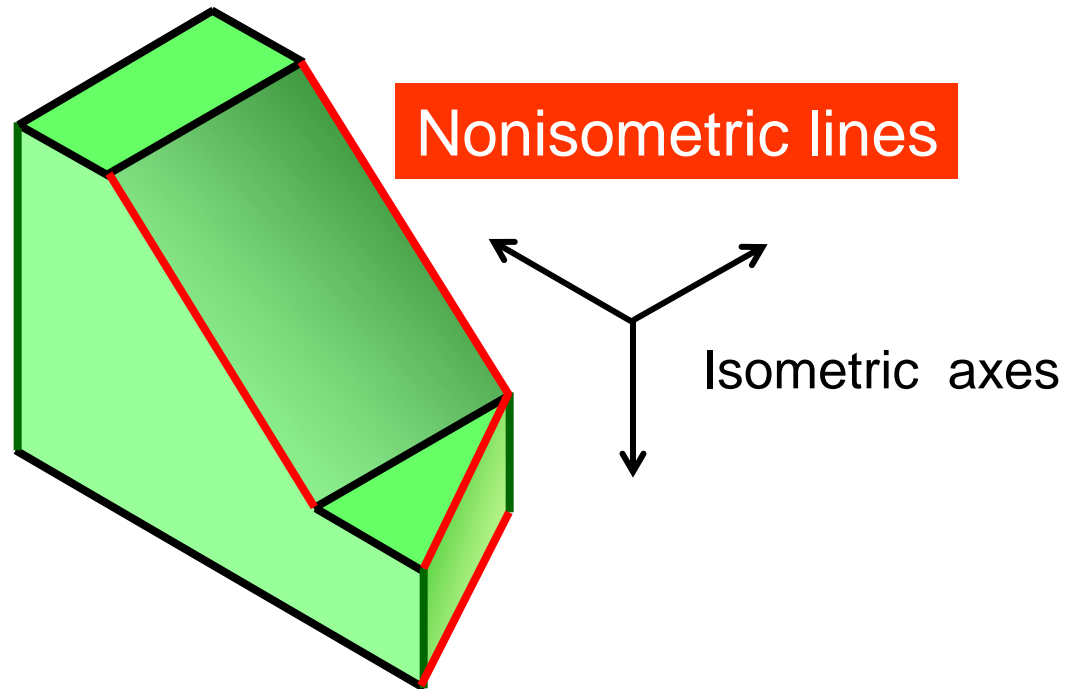


Isometric Drawing

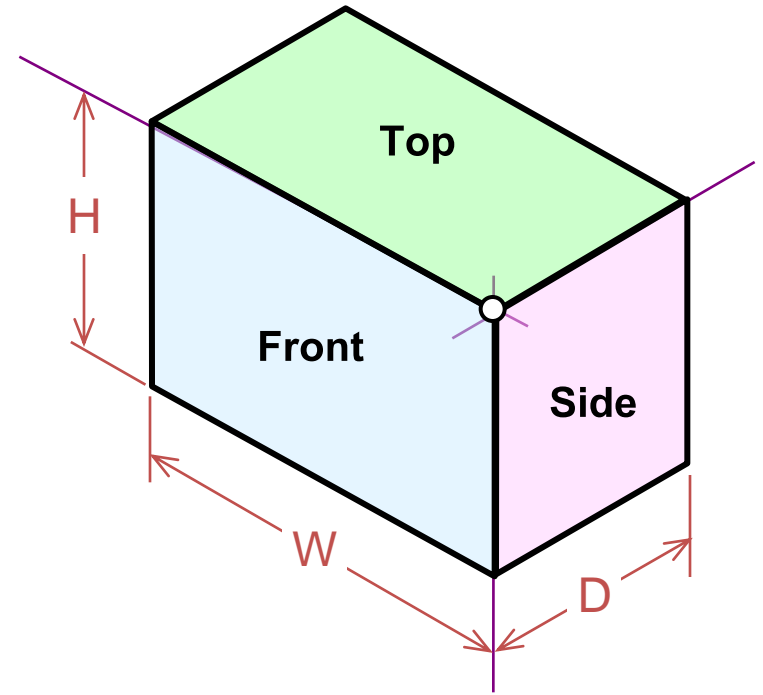
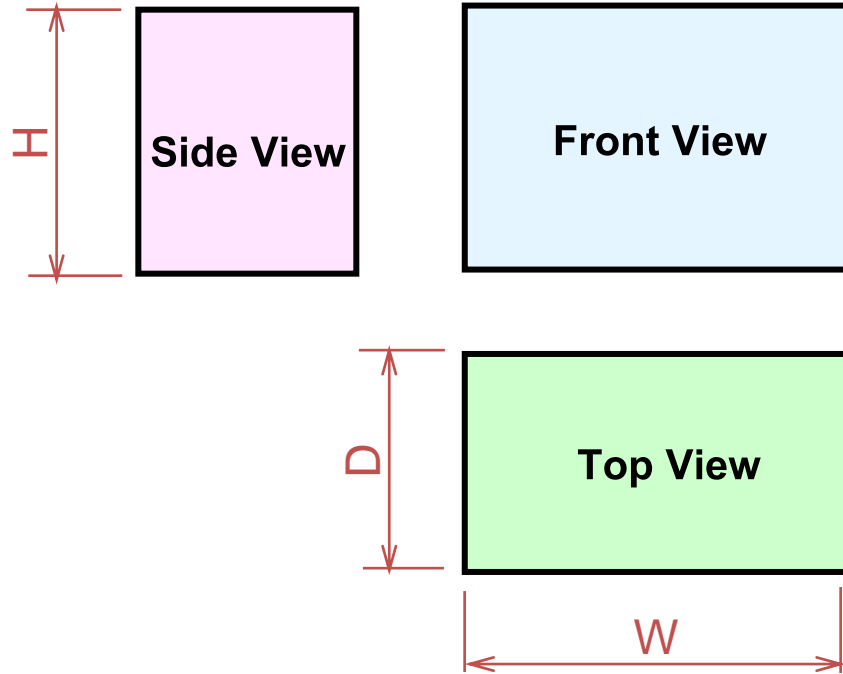


Distance in Isometric Drawing

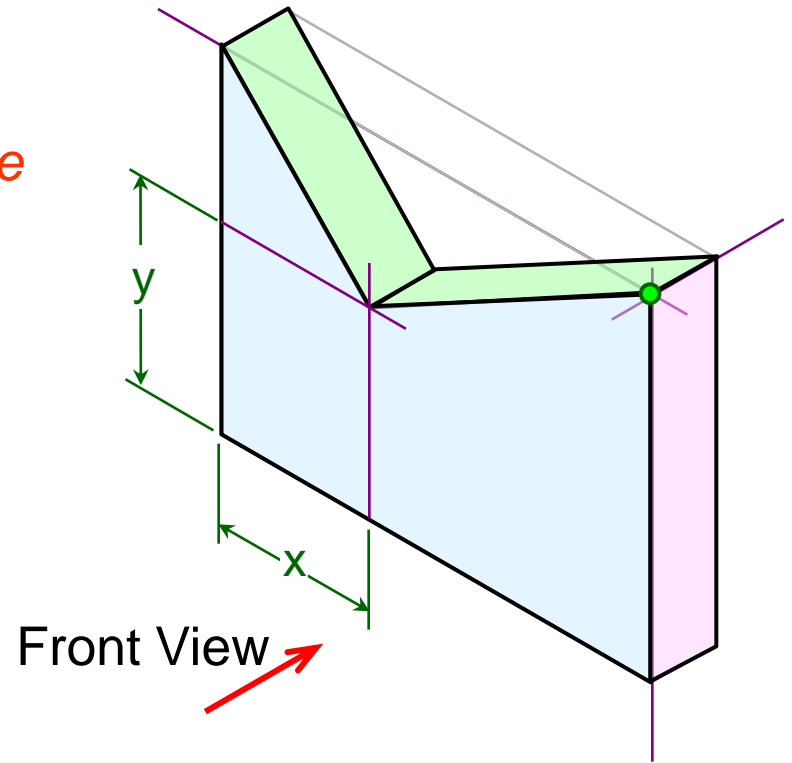
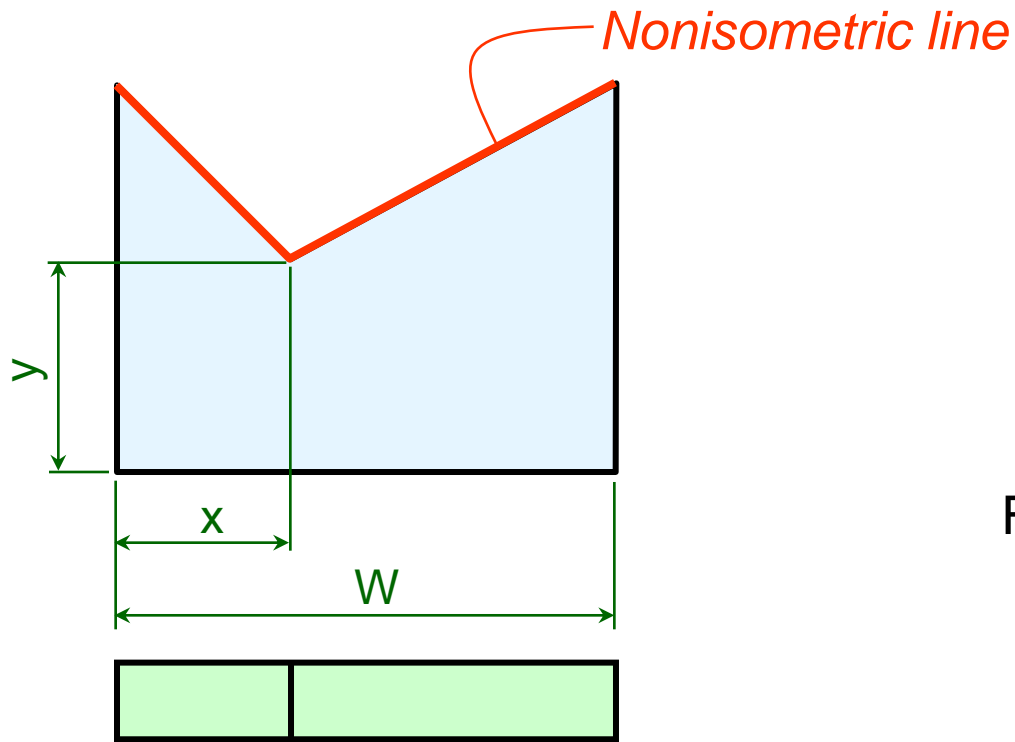
- **True-length distances** are shown along isometric lines.
- ***Isometric line*** is the line that run ***parallel*** to any of the isometric axes.



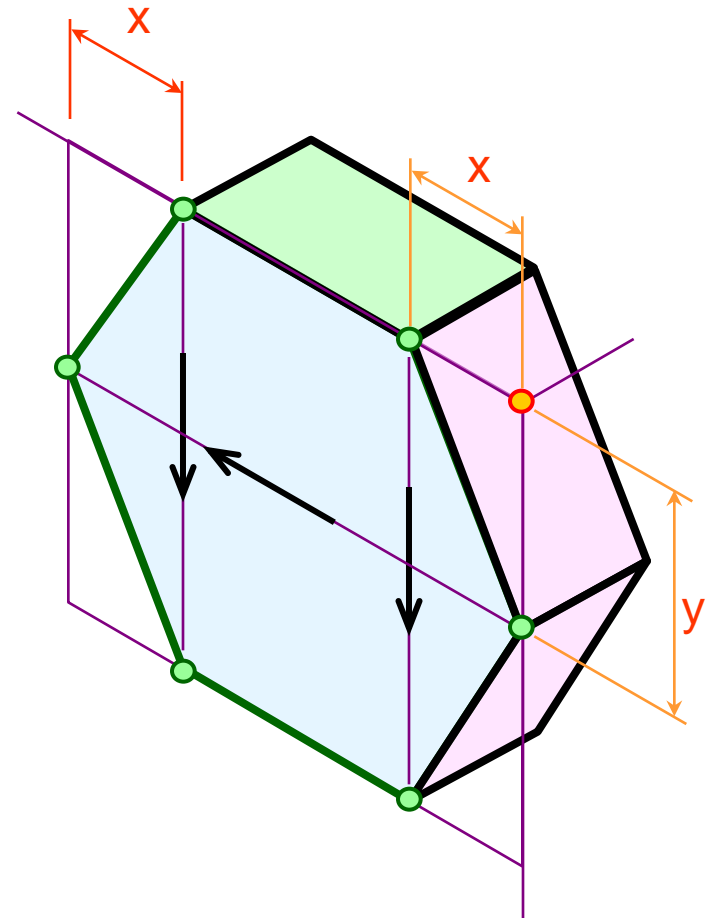
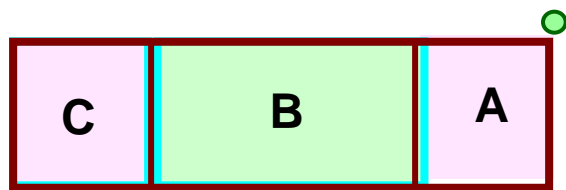
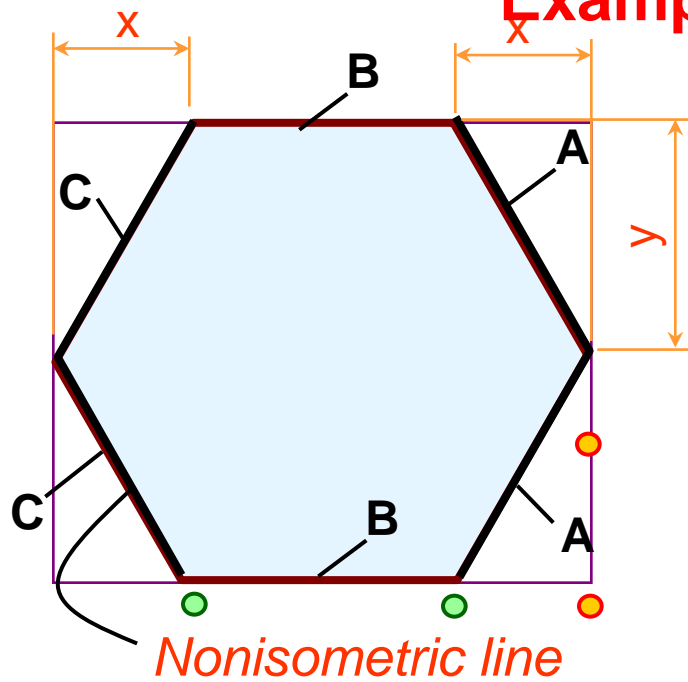
Example 1 : Object has only normal surfaces



Example 2 : Object has inclined surfaces



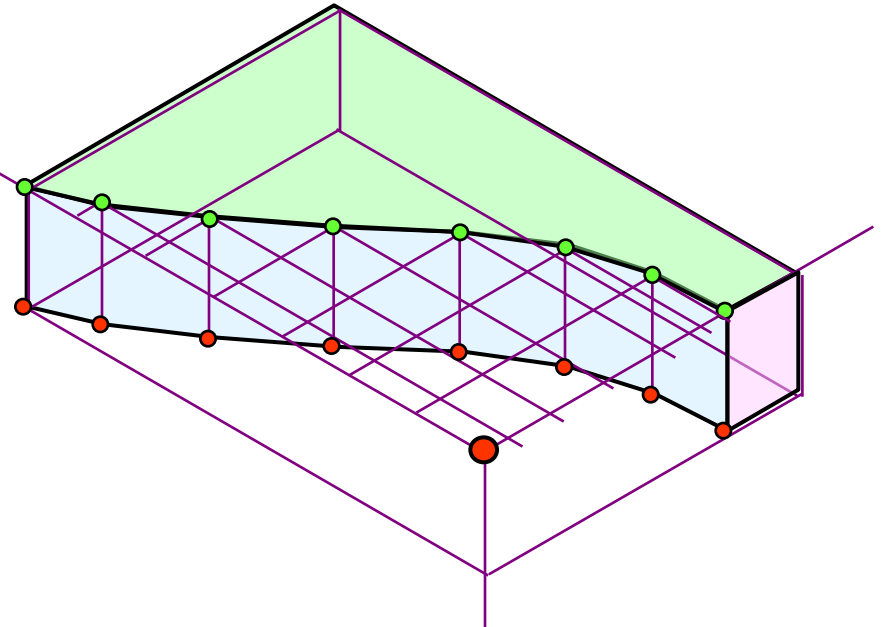
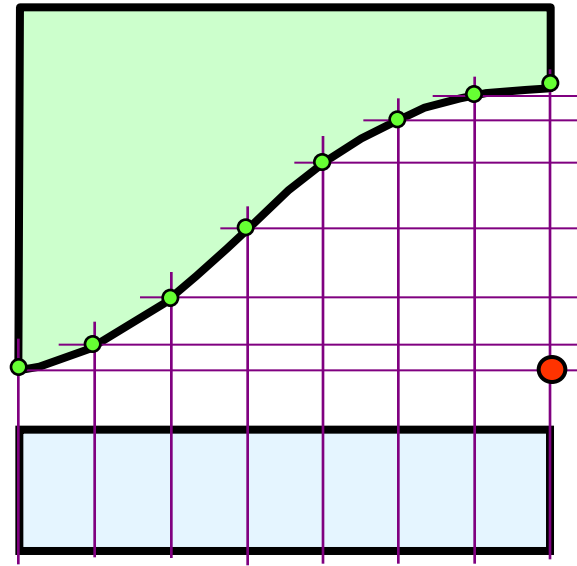
Example 3 : Object has inclined surfaces



Irregular Curve in Isometric

Steps

1. Construct points along the curve in multiview drawing.
2. Locate these points in the isometric view.
3. Sketch the connecting lines.

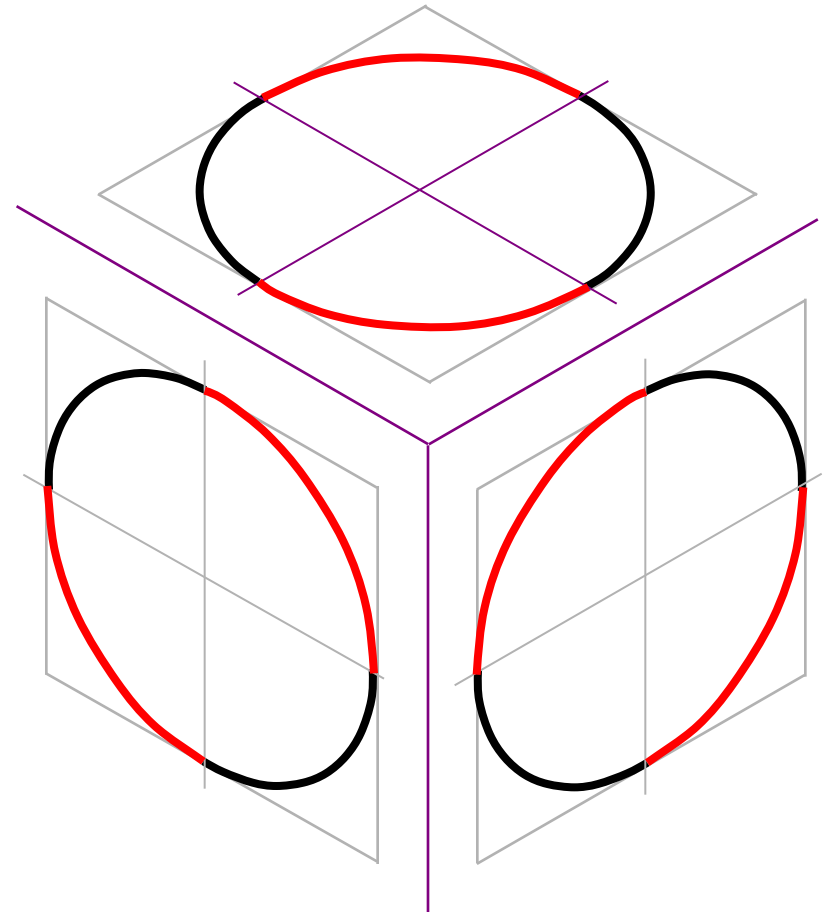


Circle & Arc in Isometric

- In isometric drawing, a circle appears as an ellipse.

Sketching Steps

1. Locate the center of an ellipse.
2. Construct an isometric square.
3. Sketch arcs that connect the tangent points.

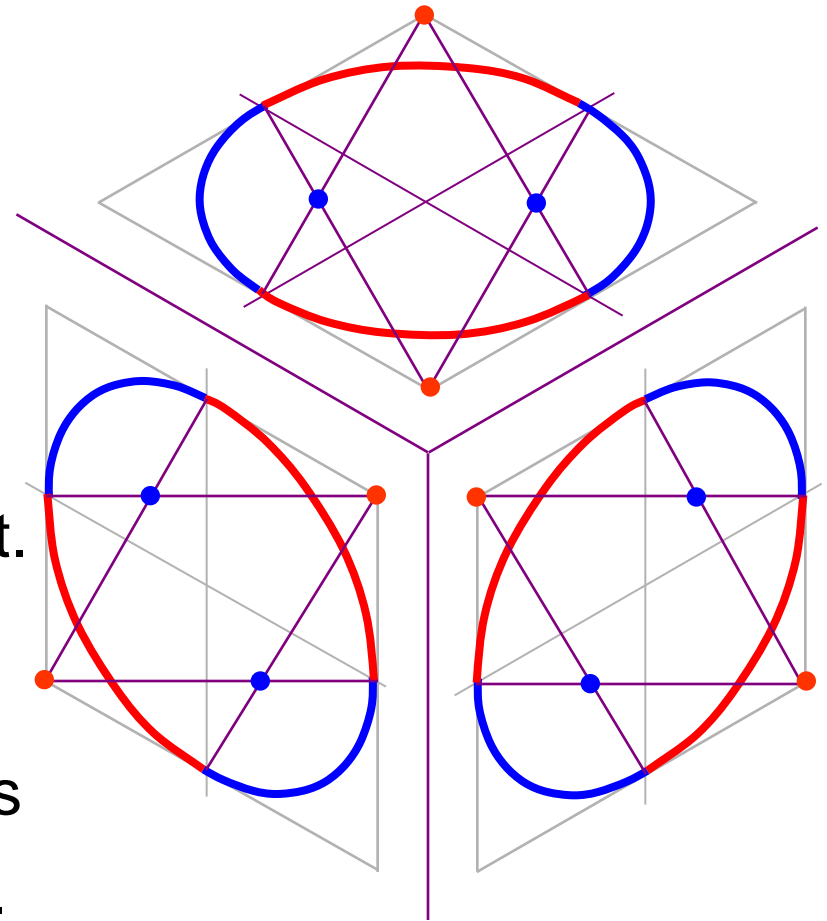


Circle & Arc in Isometric

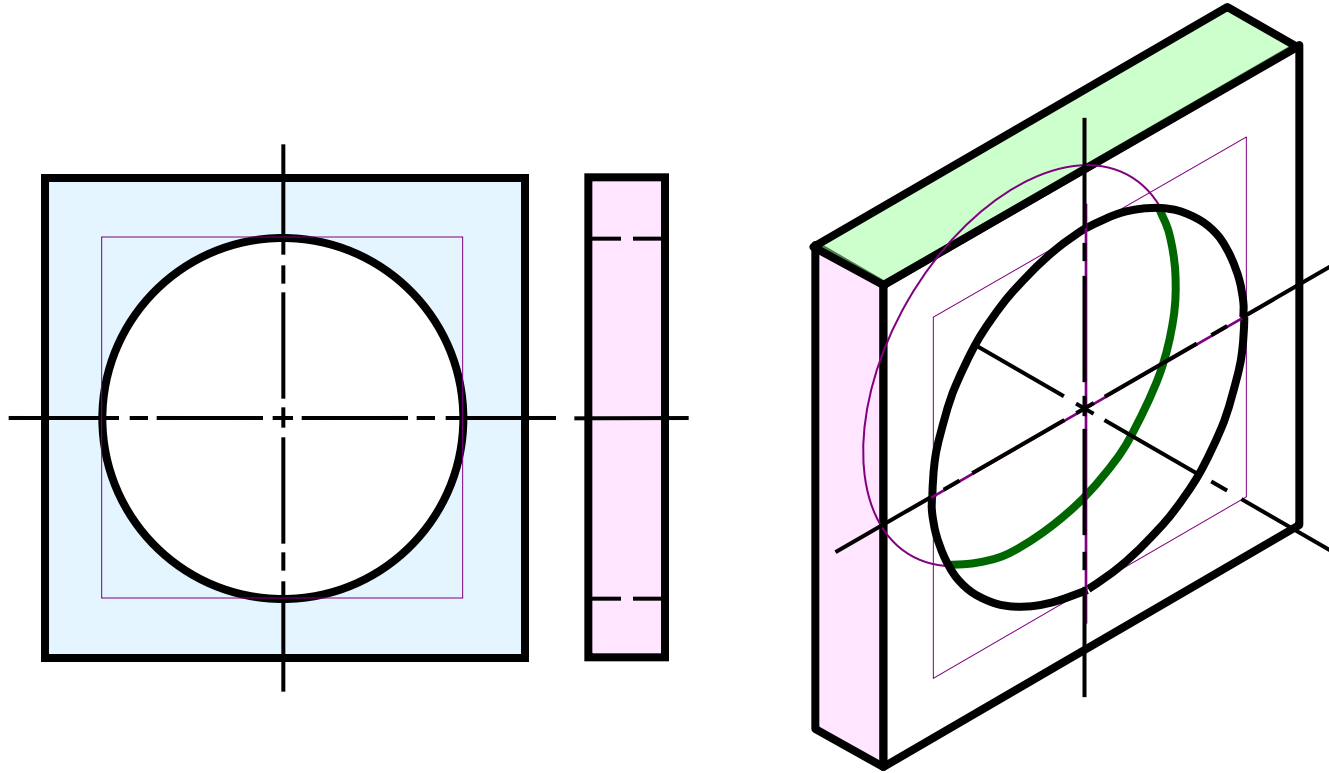
■ **Four-center** method is usually used when drawn an isometric ellipse with drawing instrument.

Sketching Steps

1. Locate the center of an ellipse.
2. Construct an isometric square.
3. Construct a perpendicular bisector from each tangent point.
4. Locate the **four** centers.
5. Draw the arcs with these centers and tangent to isometric square.



Example 5

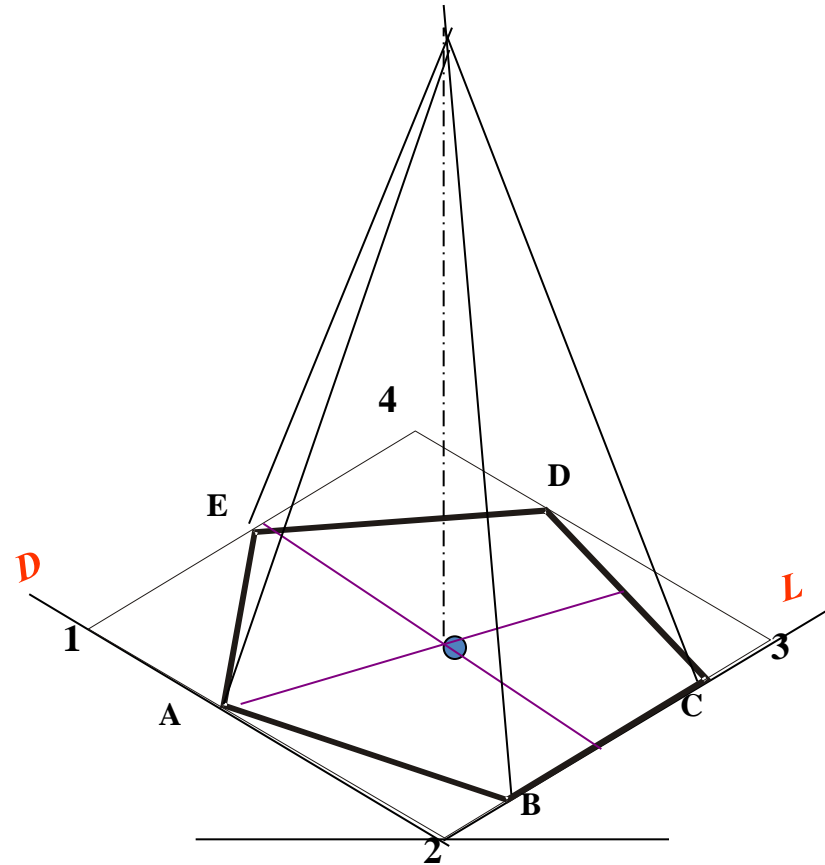
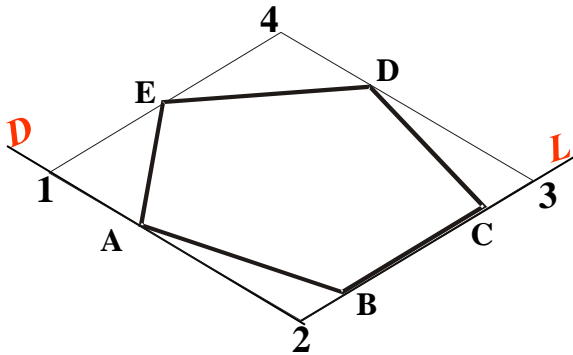


STUDY ILLUSTRATIONS

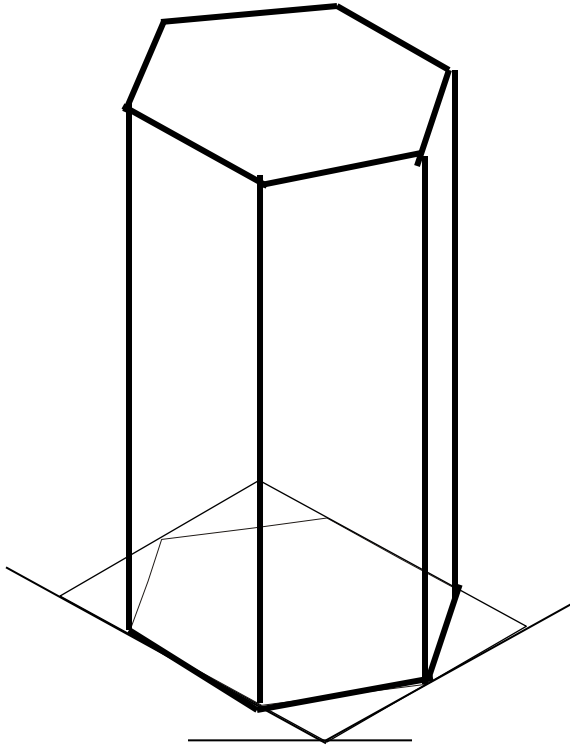
ISOMETRIC VIEW OF PENTAGONAL PYRAMID STANDING ON H.P.

(Height is added from center of pentagon)

ISOMETRIC VIEW OF BASE OF PENTAGONAL PYRAMID STANDING ON H.P.

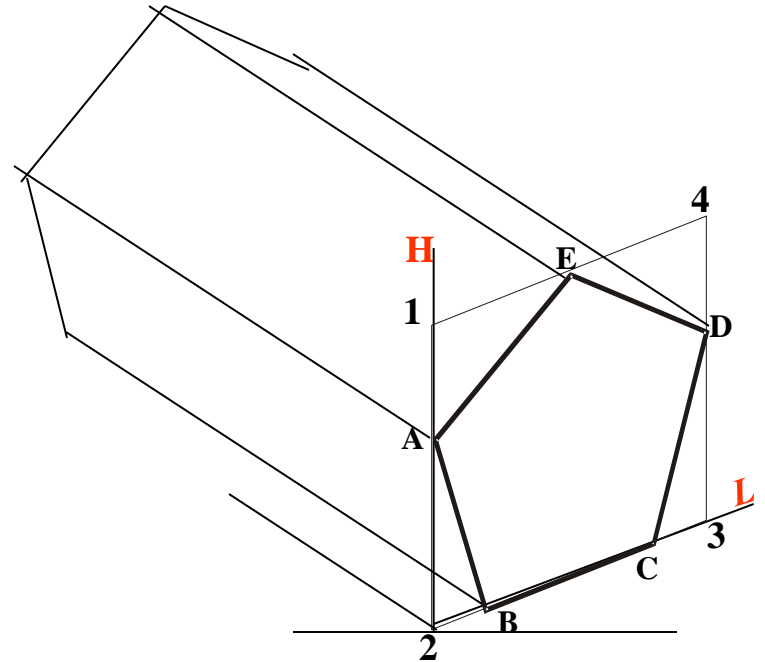


**STUDY
ILLUSTRATIONS**



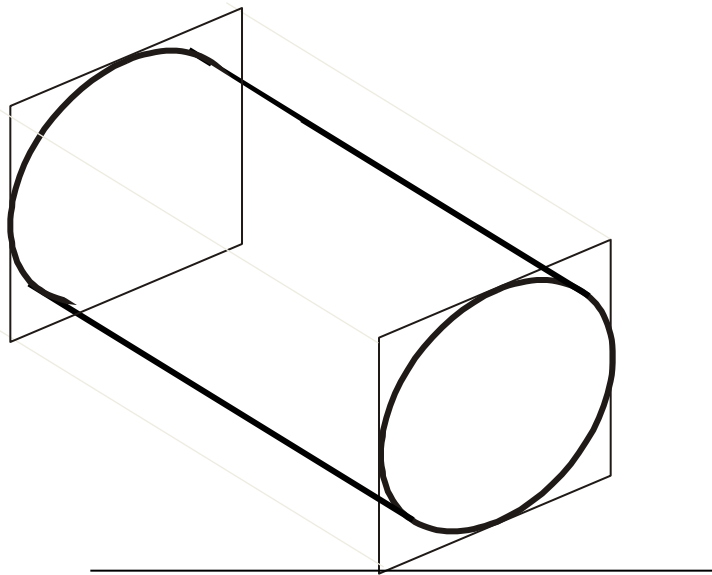
**ISOMETRIC VIEW OF
HEXAGONAL PRISM
STANDING ON H.P.**

**ISOMETRIC VIEW OF
PENTAGONAL PRISM
LYING ON H.P.**

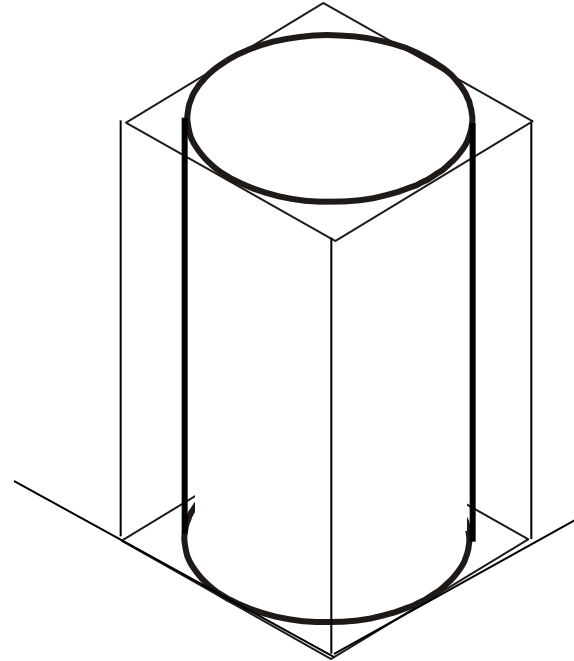


**STUDY
ILLUSTRATIONS**

CYLINDER STANDING ON H.P.

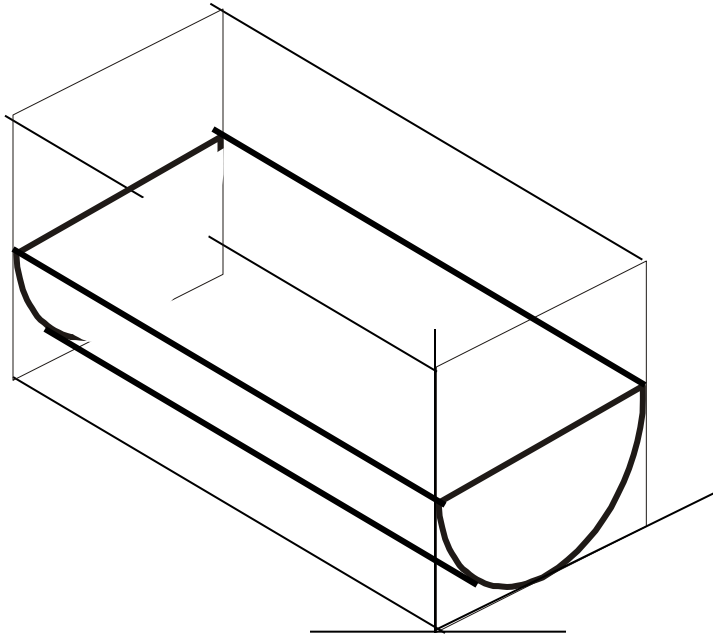


CYLINDER LYING ON H.P.

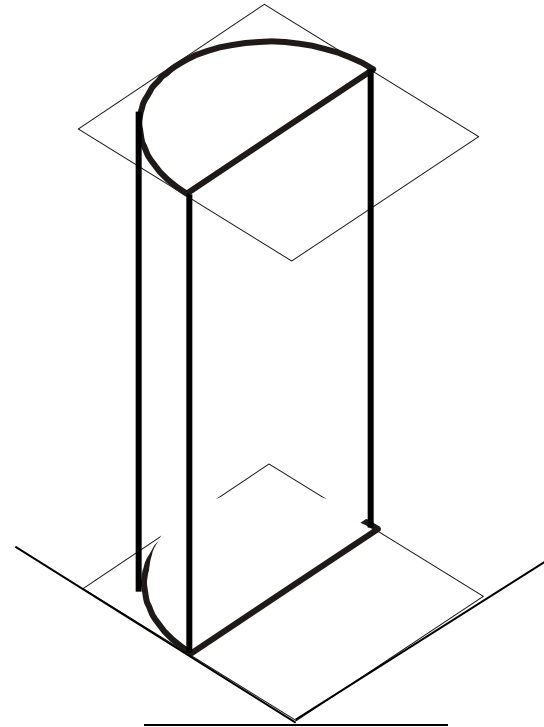


**STUDY
ILLUSTRATIONS**

**HALF CYLINDER
STANDING ON H.P.
(ON IT'S SEMICIRCULAR BASE)**

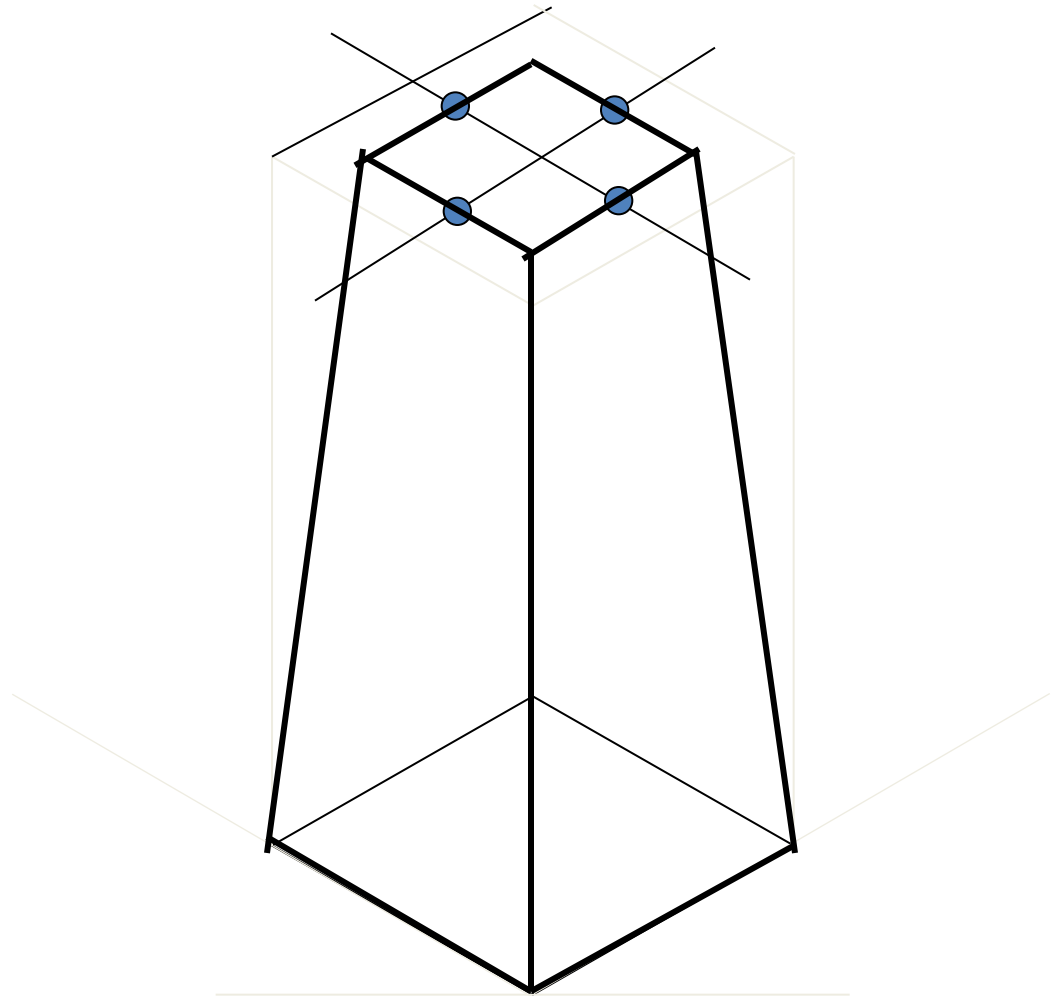
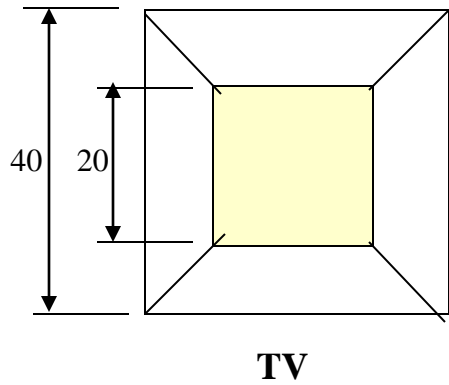
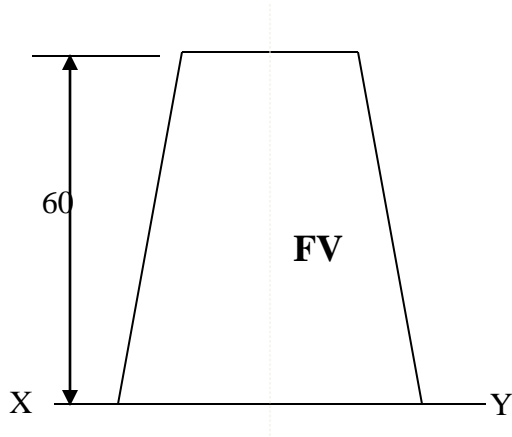


**HALF CYLINDER
LYING ON H.P.
(with flat face // to H.P.)**



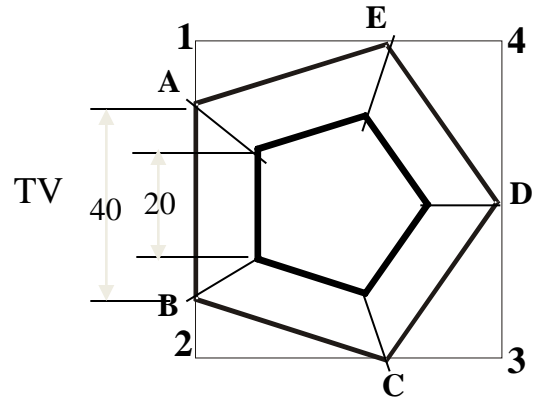
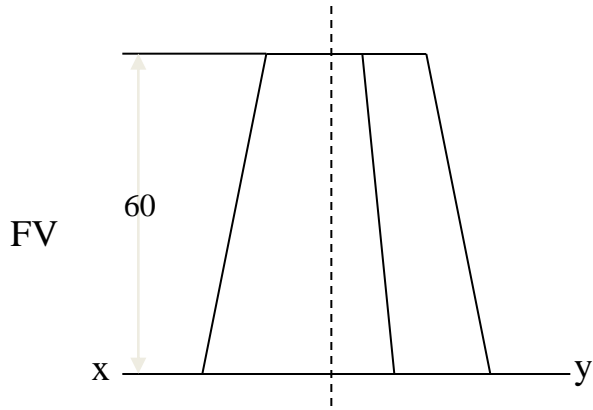
**STUDY
ILLUSTRATIONS**

**ISOMETRIC VIEW OF
A FRUSTUM OF SQUARE PYRAMID
STANDING ON H.P. ON IT'S LARGER BASE.**



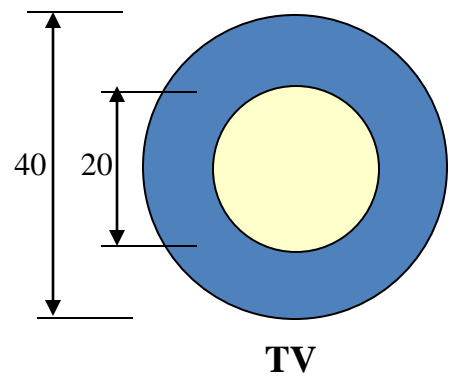
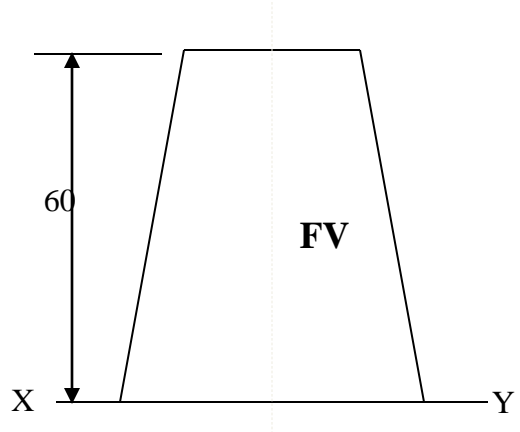
STUDY ILLUSTRATION

PROJECTIONS OF FRUSTOM OF PENTAGONAL PYRAMID ARE GIVEN.
DRAW IT'S ISOMETRIC VIEW.



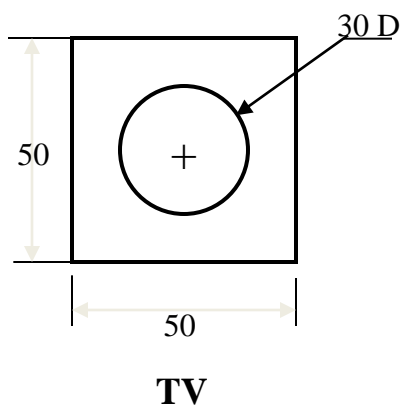
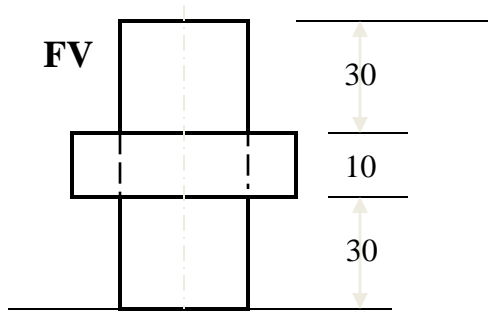
**STUDY
ILLUSTRATIONS**

**ISOMETRIC VIEW OF
A FRUSTUM OF CONE** STANDING ON
H.P. ON IT'S LARGER BASE.



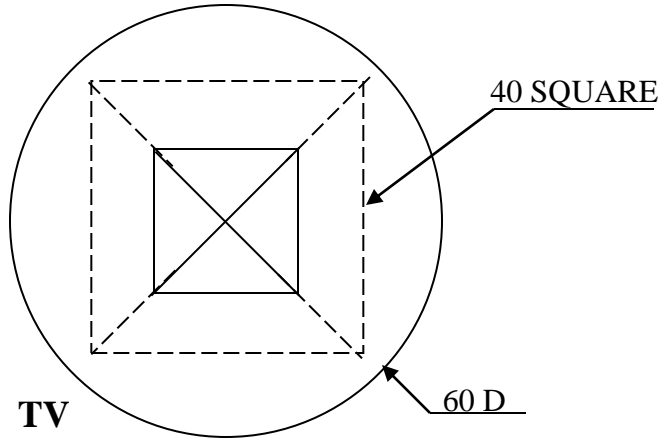
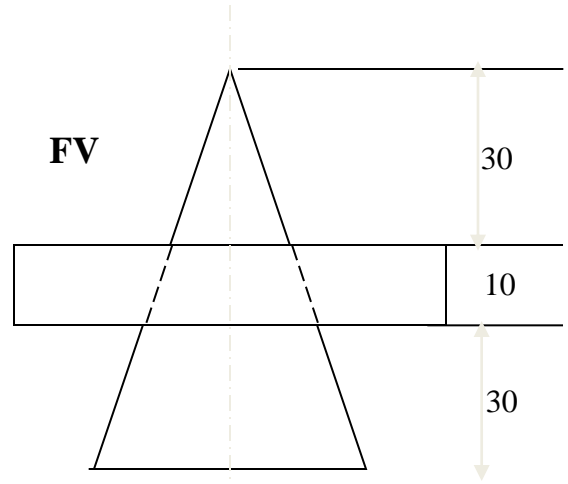
STUDY ILLUSTRATIONS

PROBLEM:
A SQUARE PLATE IS PIERCED THROUGH CENTRALLY BY A CYLINDER WHICH COMES OUT EQUALLY FROM BOTH FACES OF PLATE. IT'S FV & TV ARE SHOWN. DRAW ISOMETRIC VIEW.



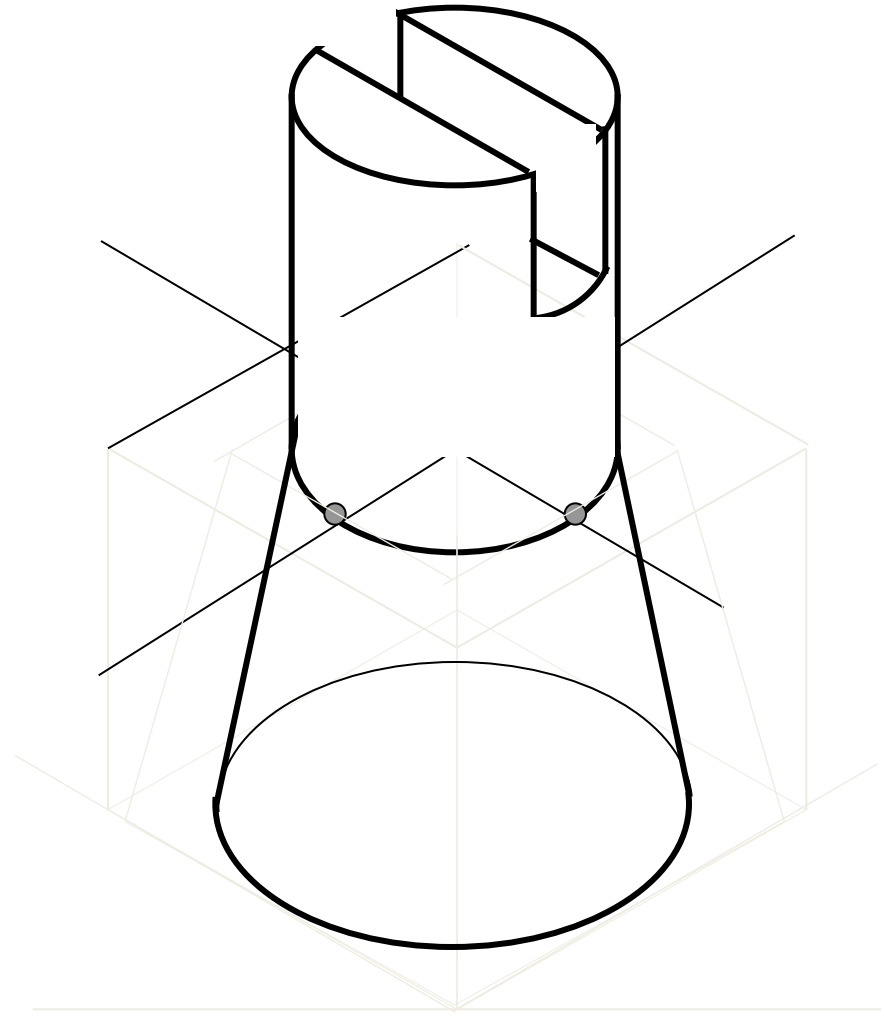
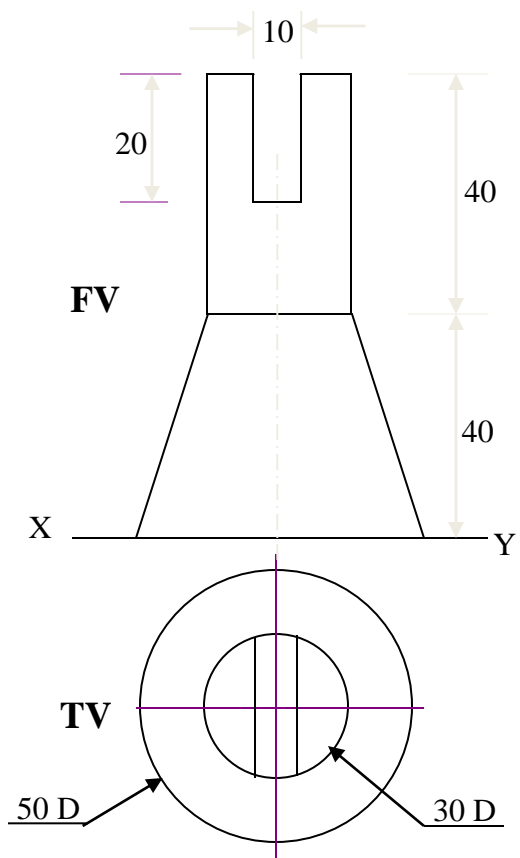
STUDY ILLUSTRATIONS

PROBLEM:
A CIRCULAR PLATE IS PIERCED THROUGH CENTRALLY BY A SQUARE PYRAMID WHICH COMES OUT EQUALLY FROM BOTH FACES OF PLATE. IT'S FV & TV ARE SHOWN. DRAW ISOMETRIC VIEW.



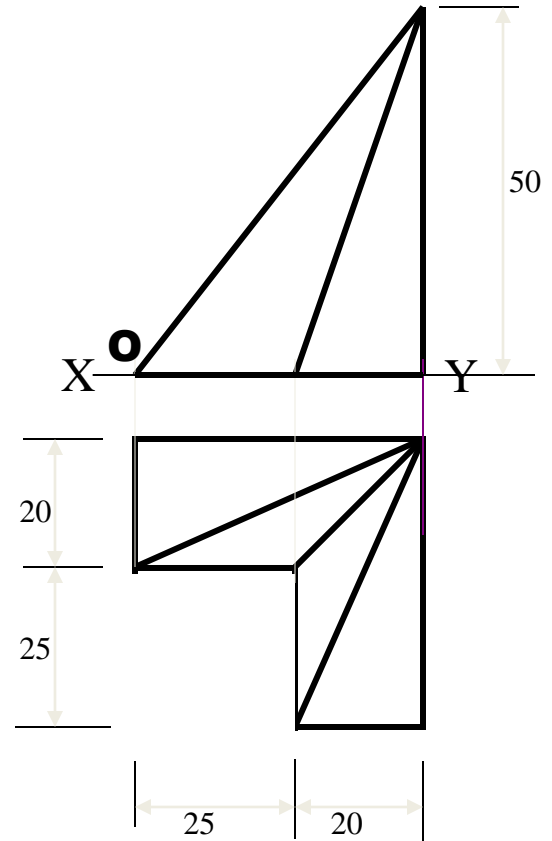
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw it's isometric view.



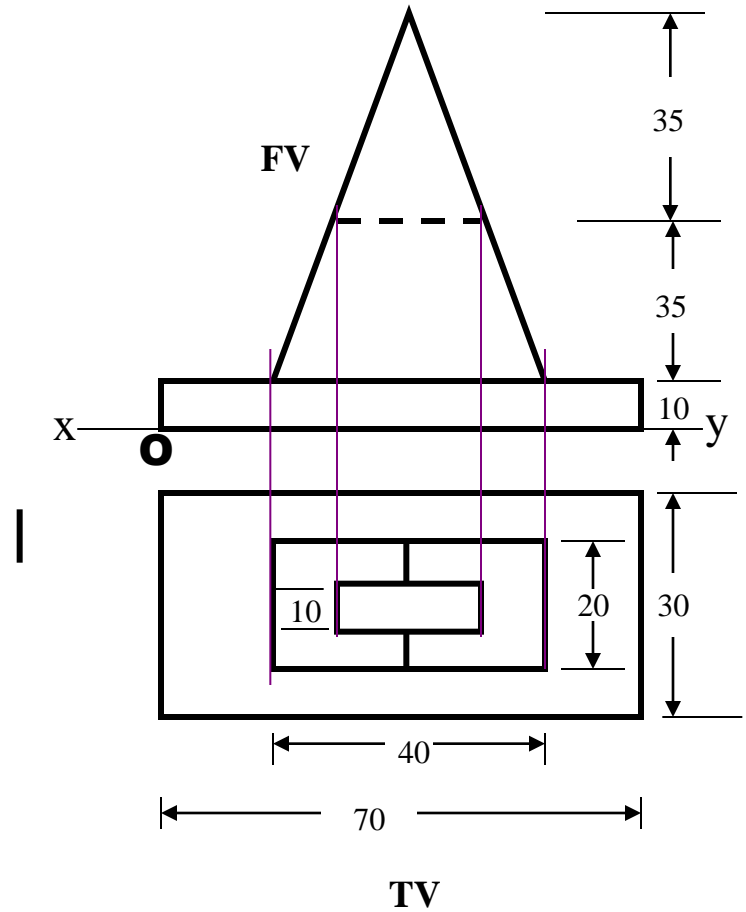
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw its isometric view.



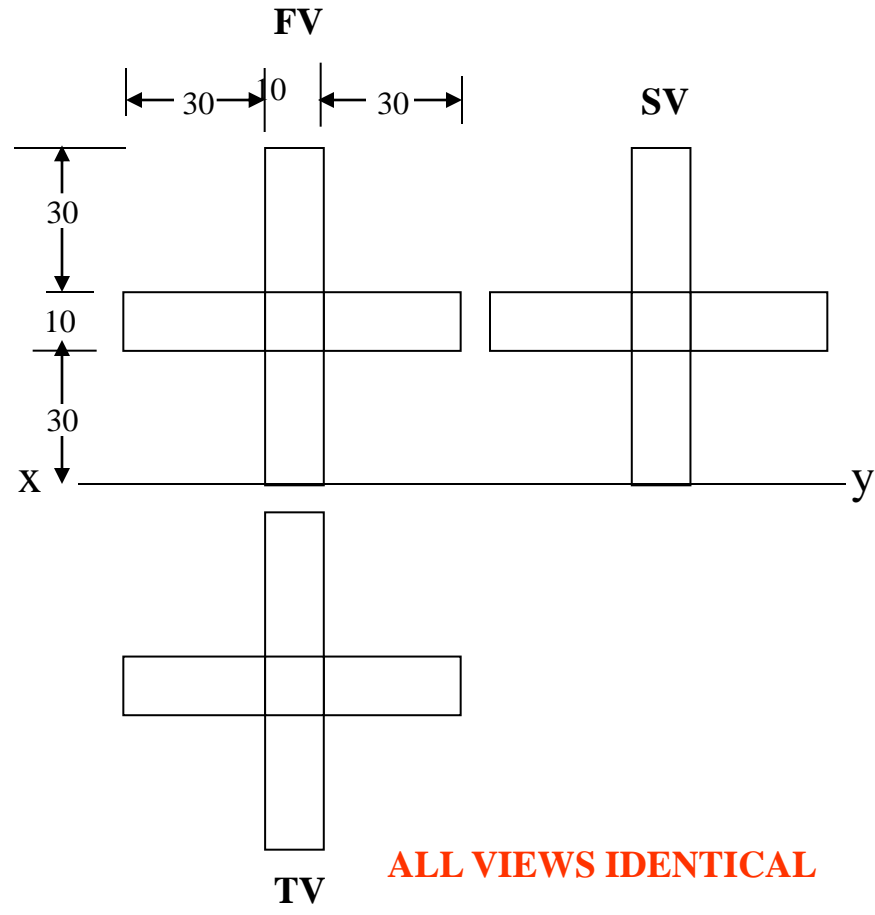
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw its isometric view.



STUDY ILLUSTRATIONS

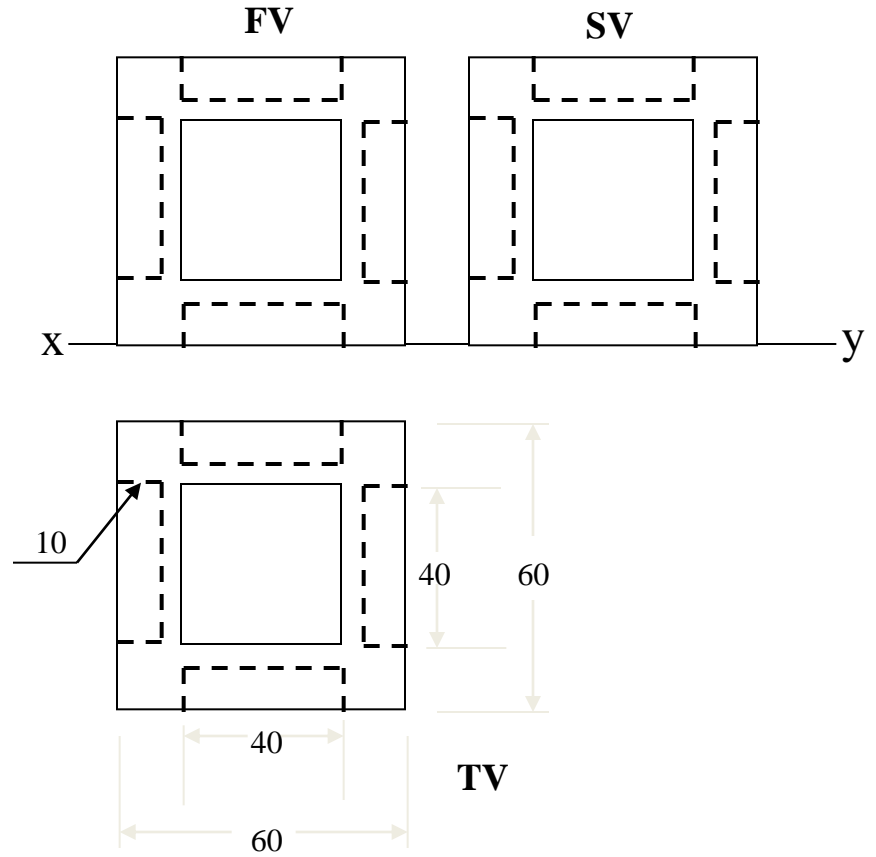
F.V. & T.V. and S.V. of an object are given. Draw its isometric view.



STUDY ILLUSTRATIONS

F.V. & T.V. and S.V. of an object are given. Draw its isometric view.

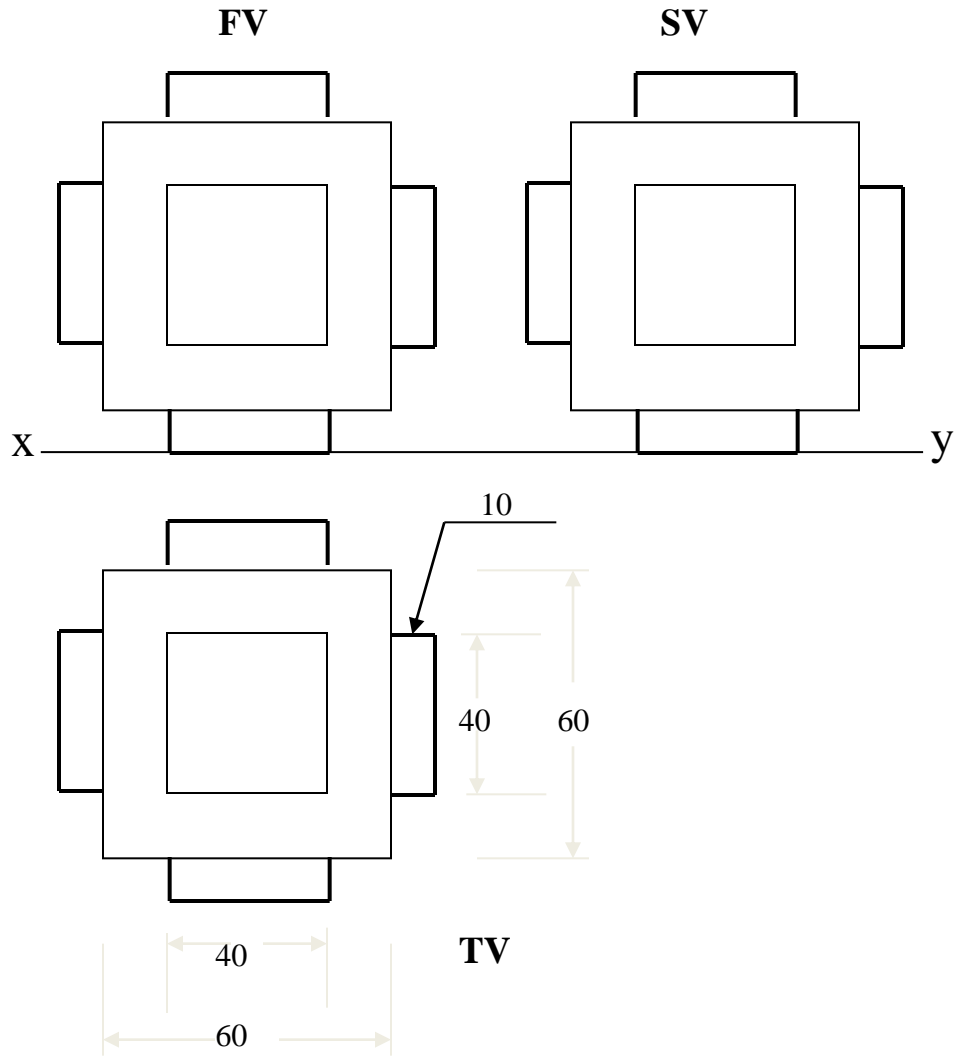
ALL VIEWS IDENTICAL



**STUDY
ILLUSTRATIONS**

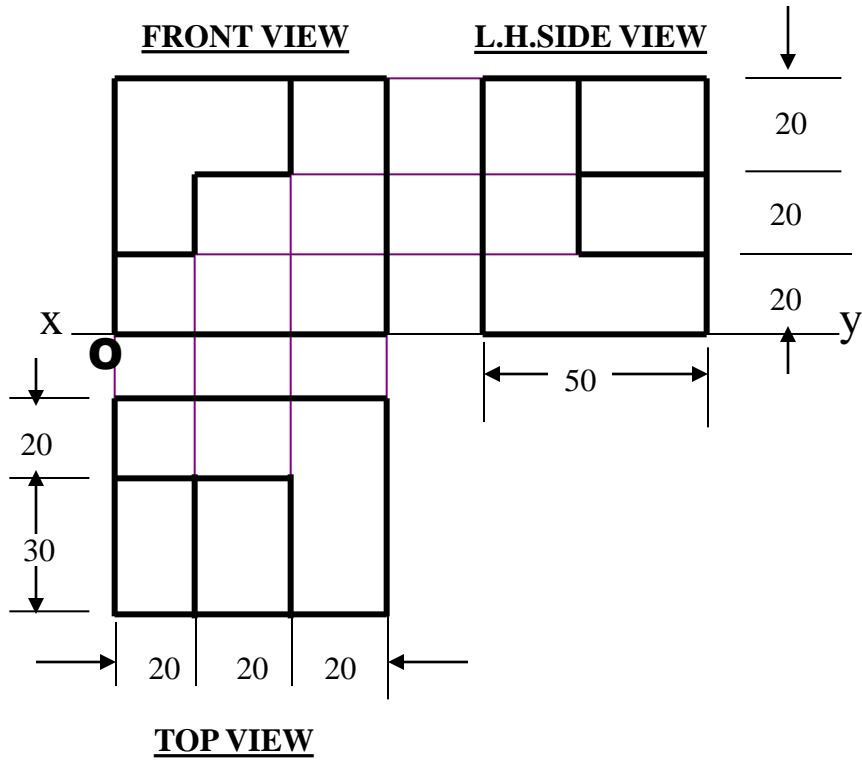
F.V. & T.V. and S.V. of an object are given. Draw its isometric view.

ALL VIEWS IDENTICAL



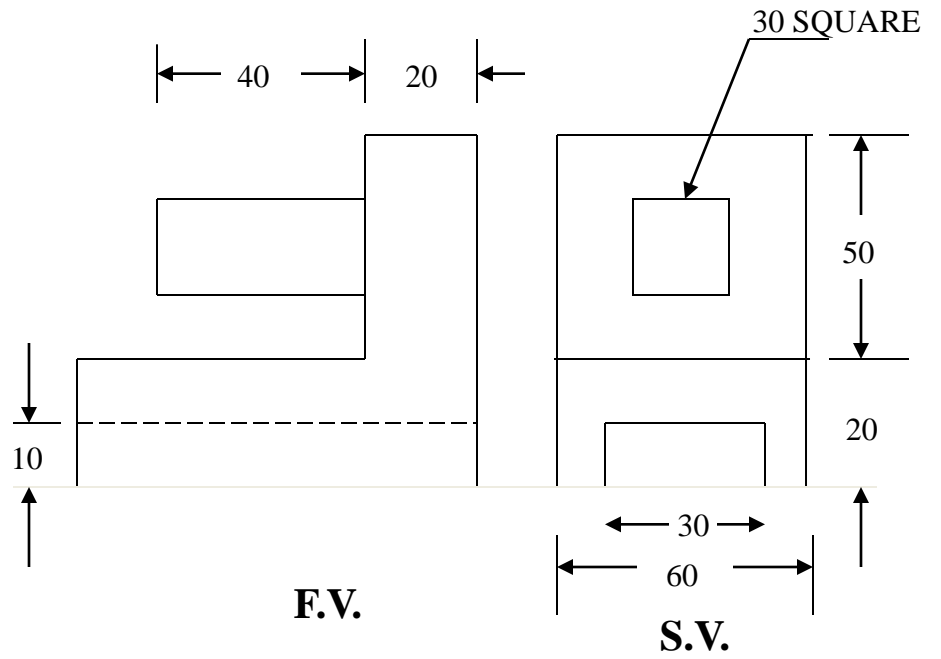
F.V. & T.V. and S.V.of an object are given. Draw it's isometric view.

ORTHOGRAPHIC PROJECTIONS



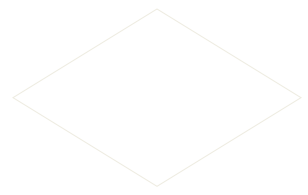
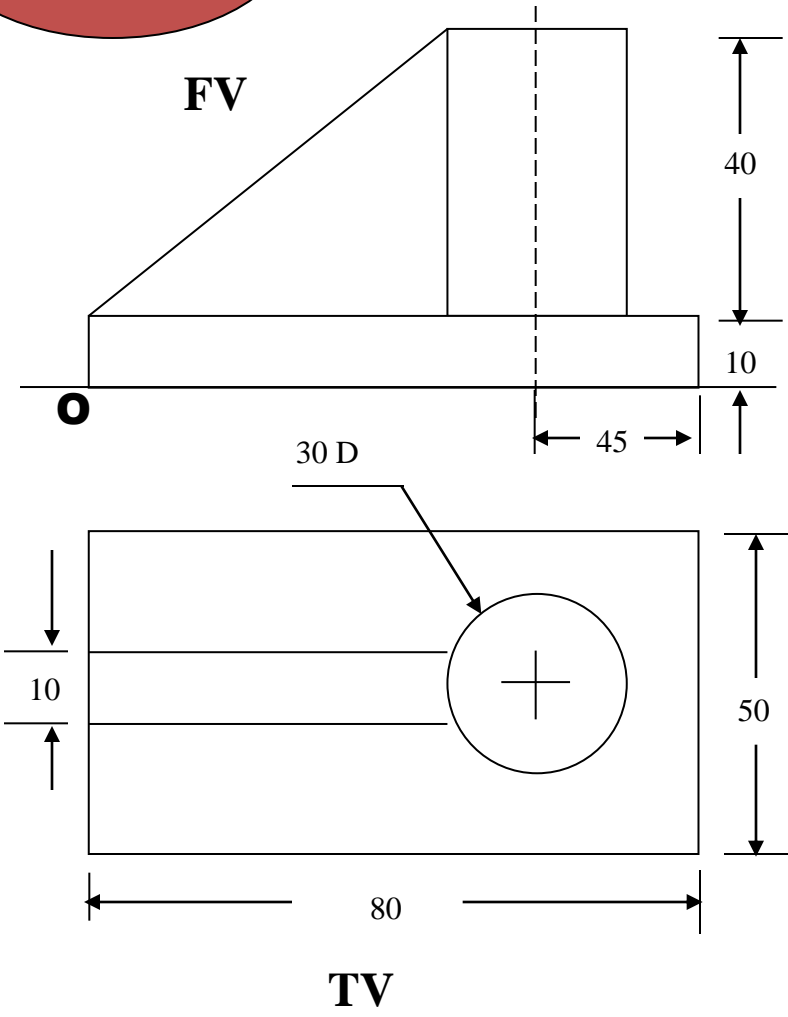
**STUDY
ILLUSTRATIONS**

**F.V. and S.V. of an object are given.
Draw its isometric view.**



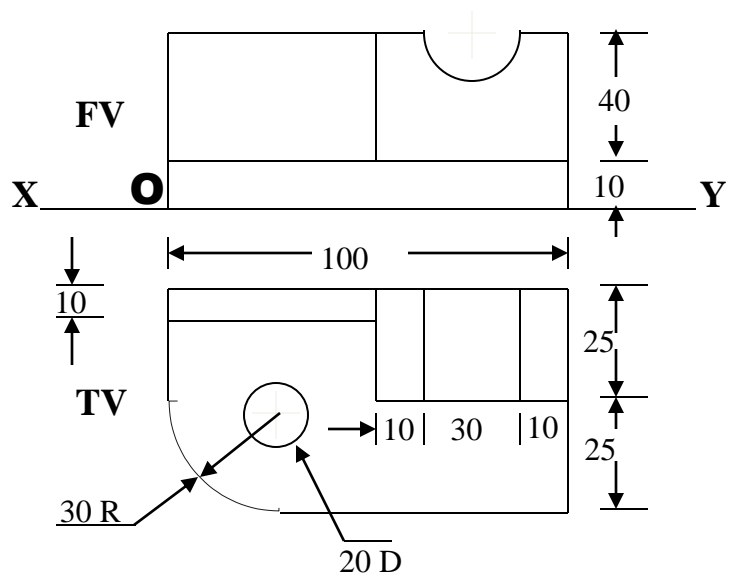
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw it's isometric view.



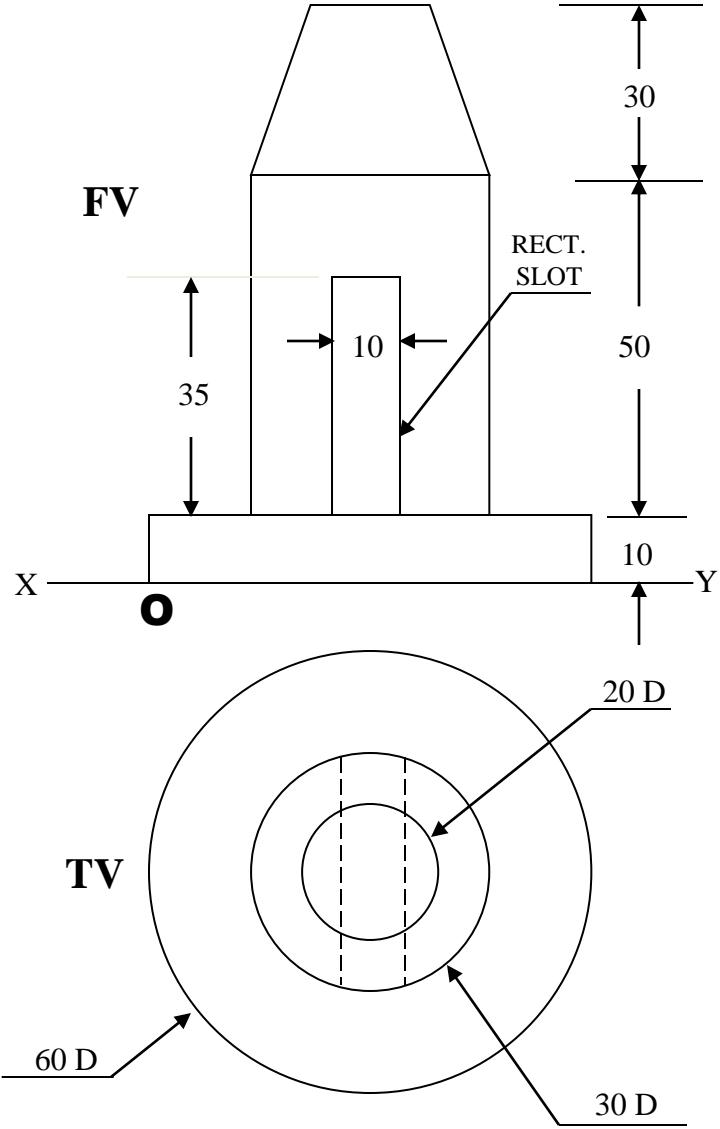
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw its isometric view.



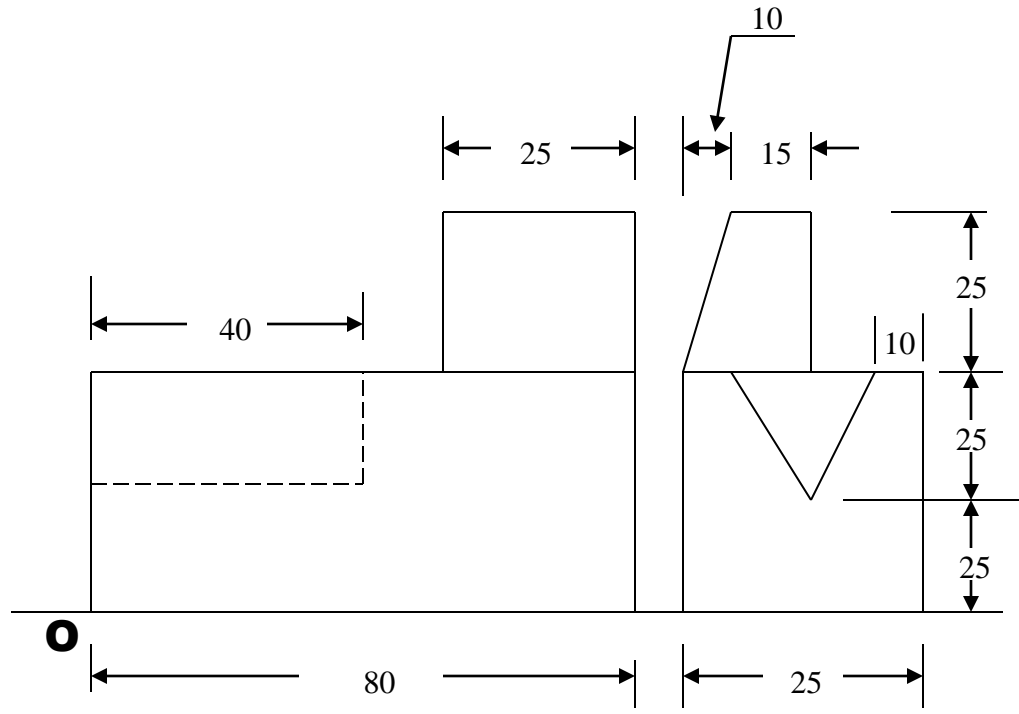
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw it's isometric view.



**STUDY
ILLUSTRATIONS**

F.V. and S.V. of an object are given. Draw its isometric view.

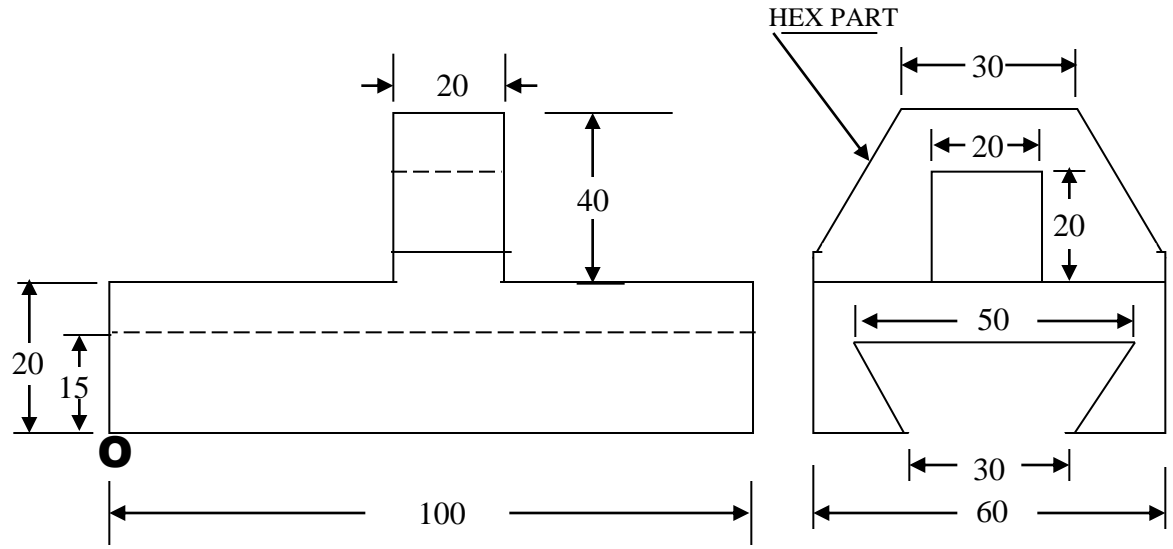


F.V.

S.V.

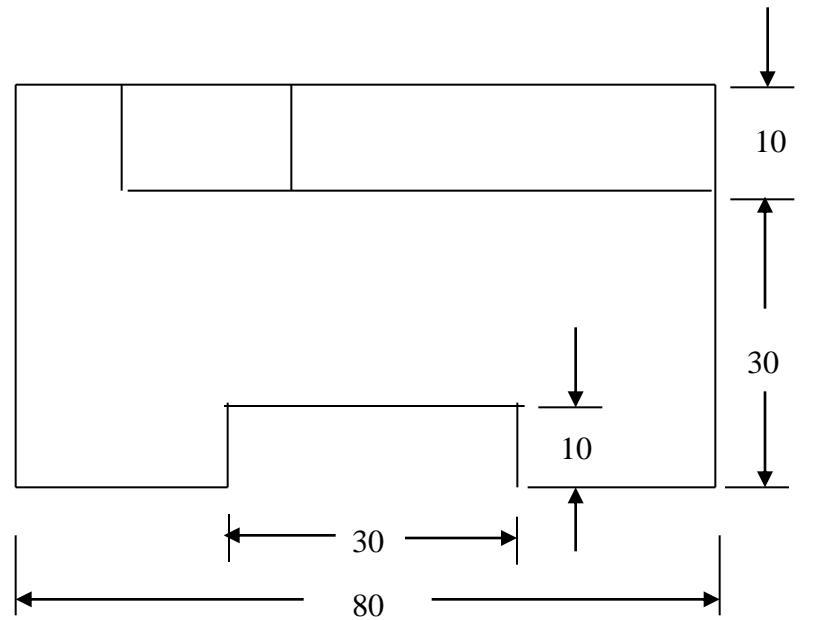
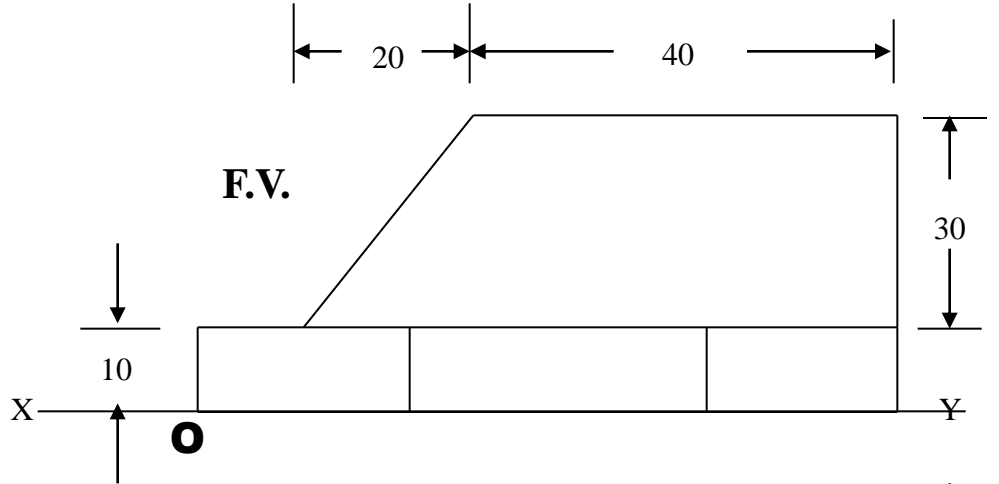
**STUDY
ILLUSTRATIONS**

**F.V. and S.V. of an object are given.
Draw its isometric view.**



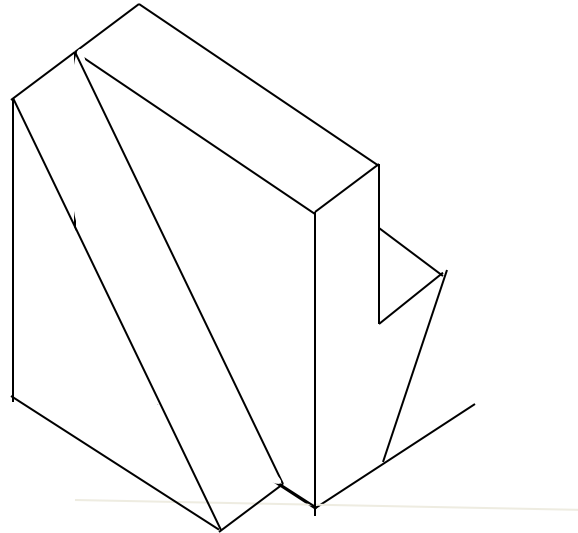
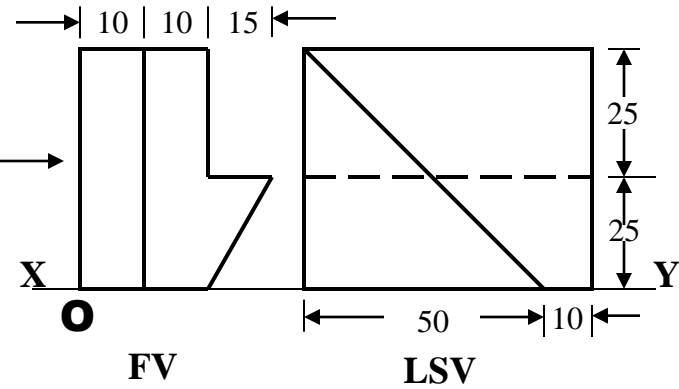
STUDY ILLUSTRATIONS

F.V. & T.V. of an object are given. Draw it's isometric view.



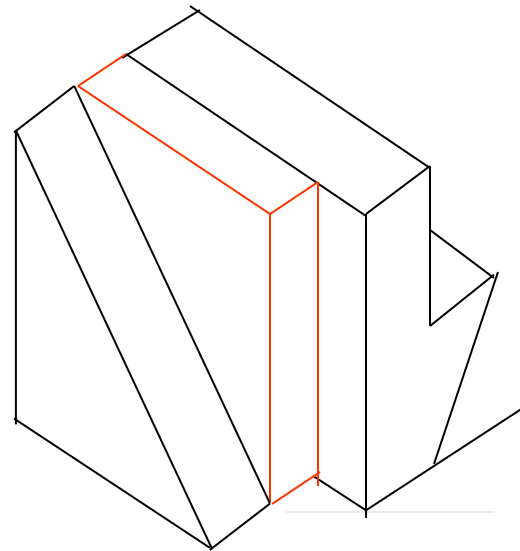
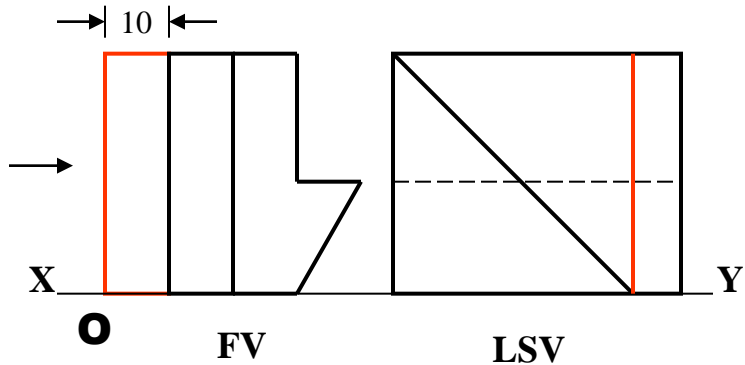
T.V.

**F.V. and S.V. of an object are given.
Draw it's isometric view.**

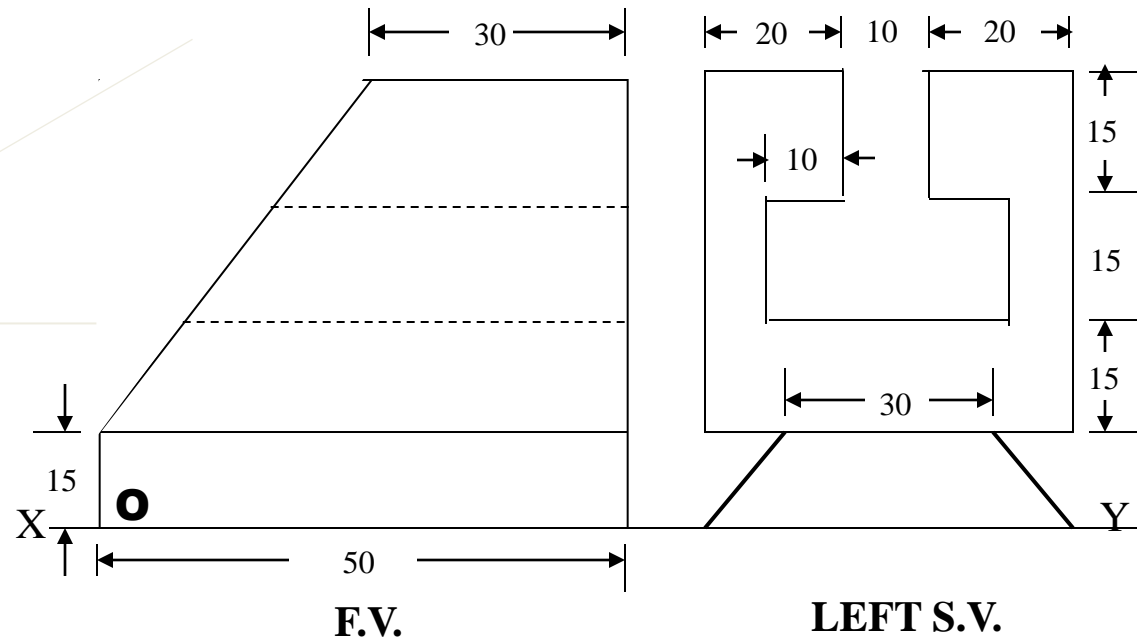


**STUDY
ILLUSTRATIONS**

**NOTE THE SMALL CHNGE IN 2ND FV & SV.
DRAW ISOMETRIC ACCORDINGLY.**



**F.V. and S.V. of an object are given.
Draw its isometric view.**



**STUDY
ILLUSTRATIONS**

**F.V. and S.V. of an object are given.
Draw its isometric view.**

