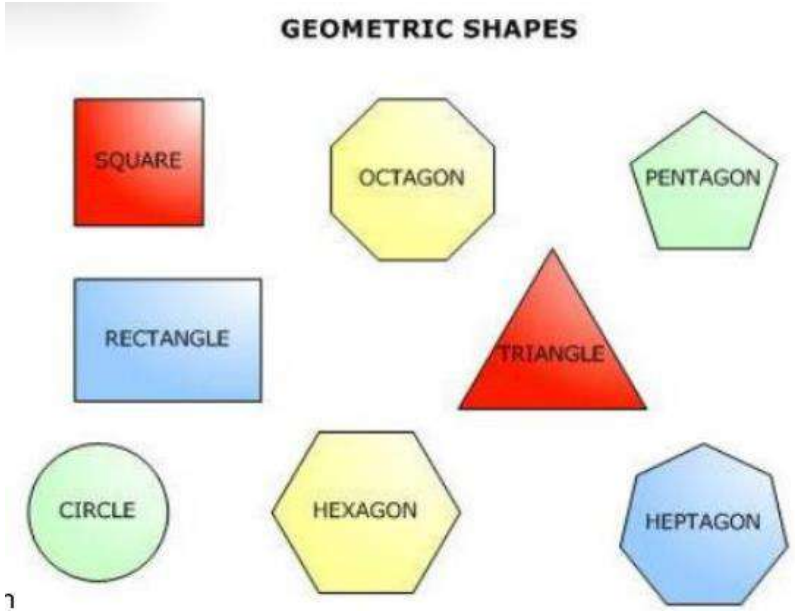
PROJECTION OF PLANES

- Two dimensional objects are called planes.
- Planes have length, breadth and negligible thickness.



There are two types of Planes:

1. Perpendicular planes:

(i) Perpendicular to both the reference planes.

(ii) Perpendicular to one plane and parallel to the other.

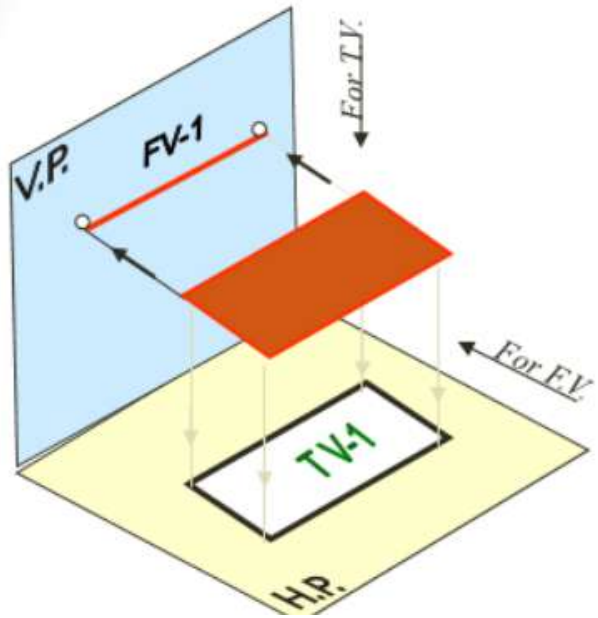
(iii) Perpendicular to one plane and incline to the other.

2. Oblique planes which have their surface inclined to both the reference planes.

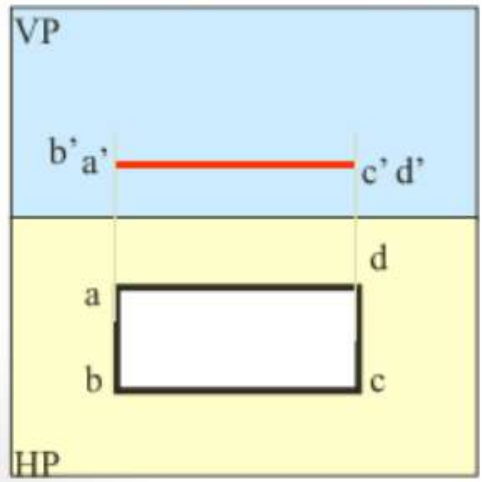
POSITION OF PLANES

A

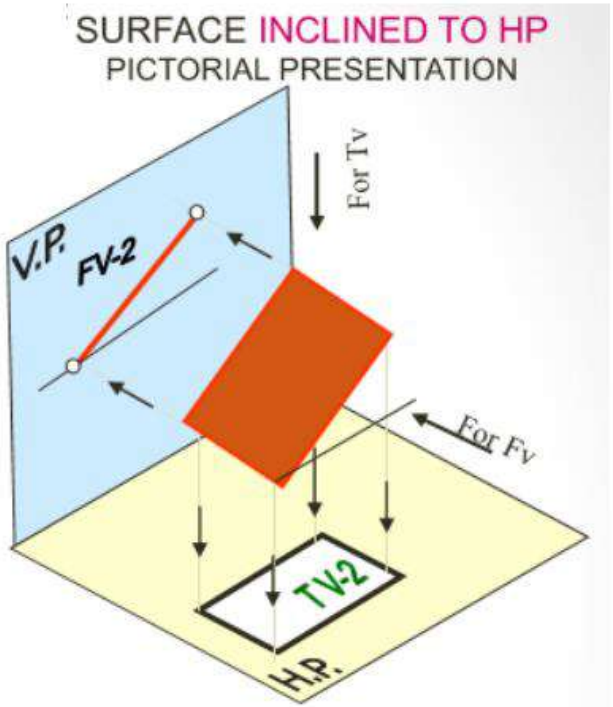
SURFACE PARALLEL TO HP
PICTORIAL PRESENTATION

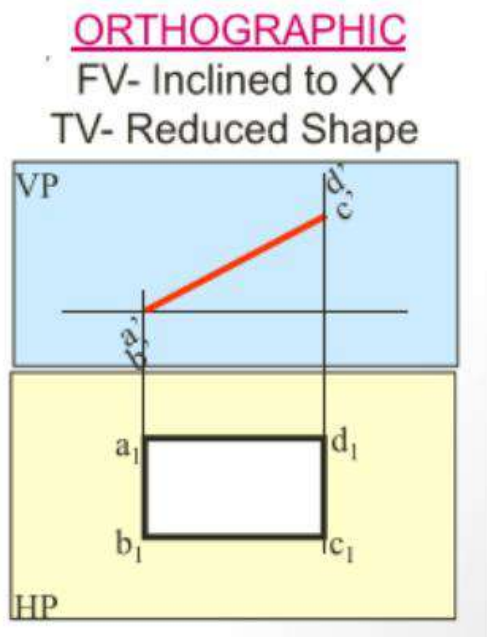


ORTHOGRAPHIC
TV-True Shape
FV- Line // to xy



B

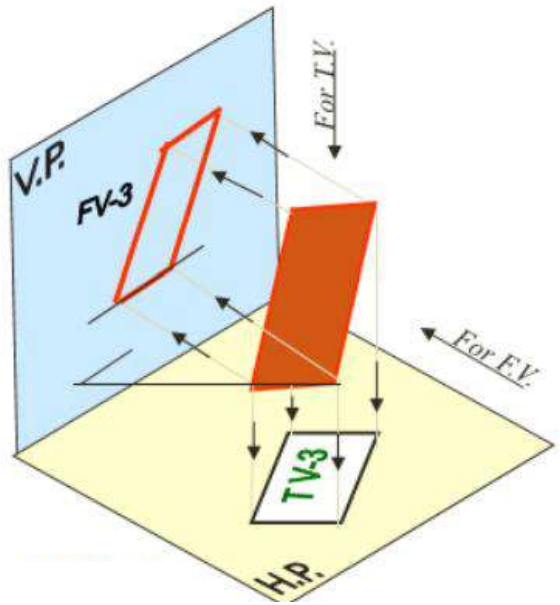

SURFACE INCLINED TO HP
PICTORIAL PRESENTATION
V.P.
FV-2
For Tv
For Fv
TV-2
H.P.


ORTHOGRAPHIC
FV- Inclined to XY
TV- Reduced Shape
VP
d_1'
c_1'
a_1'
b_1'
a_1
d_1
b_1
c_1
HP

C

ONE SMALL SIDE INCLINED TO VP

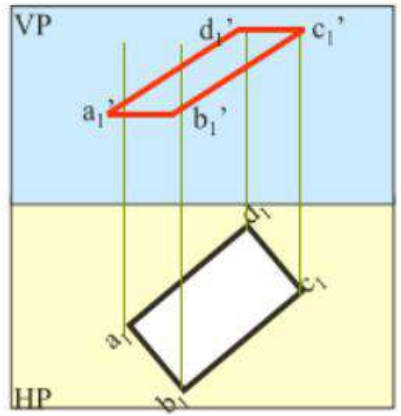
PICTORIAL PRESENTATION



ORTHOGRAPHIC

FV- Apparent Shape

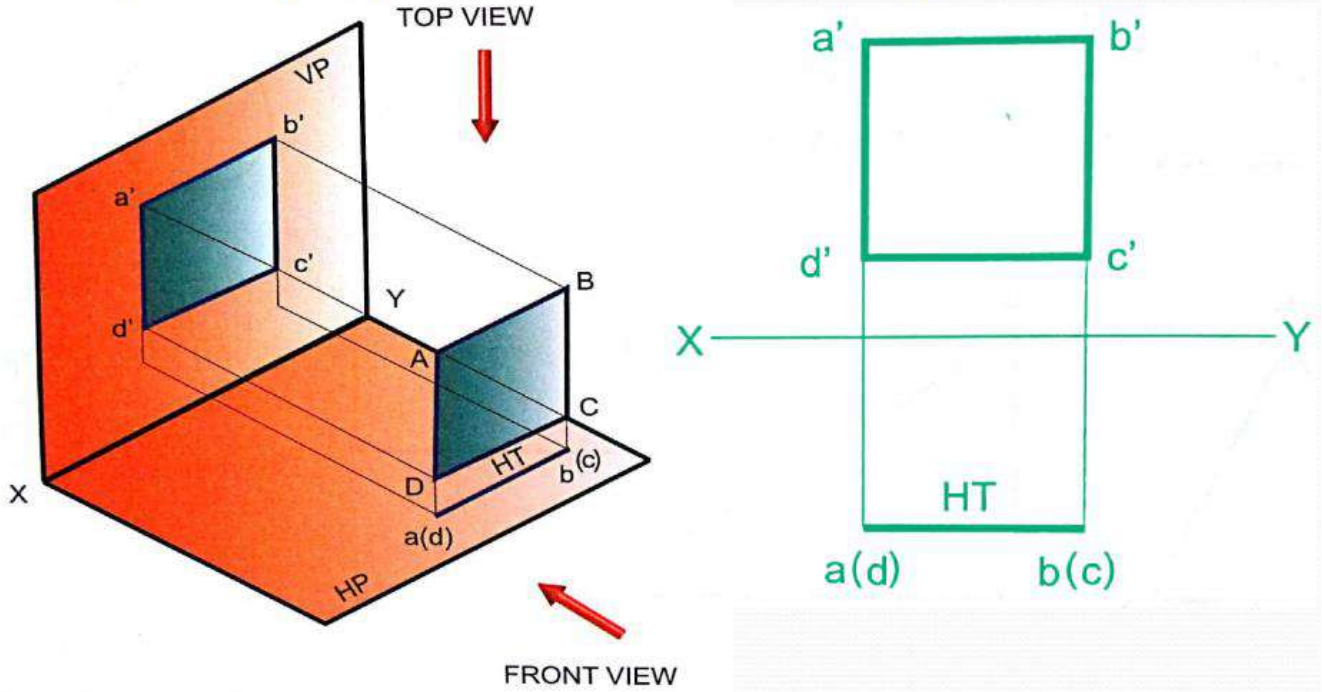
TV-Previous Shape



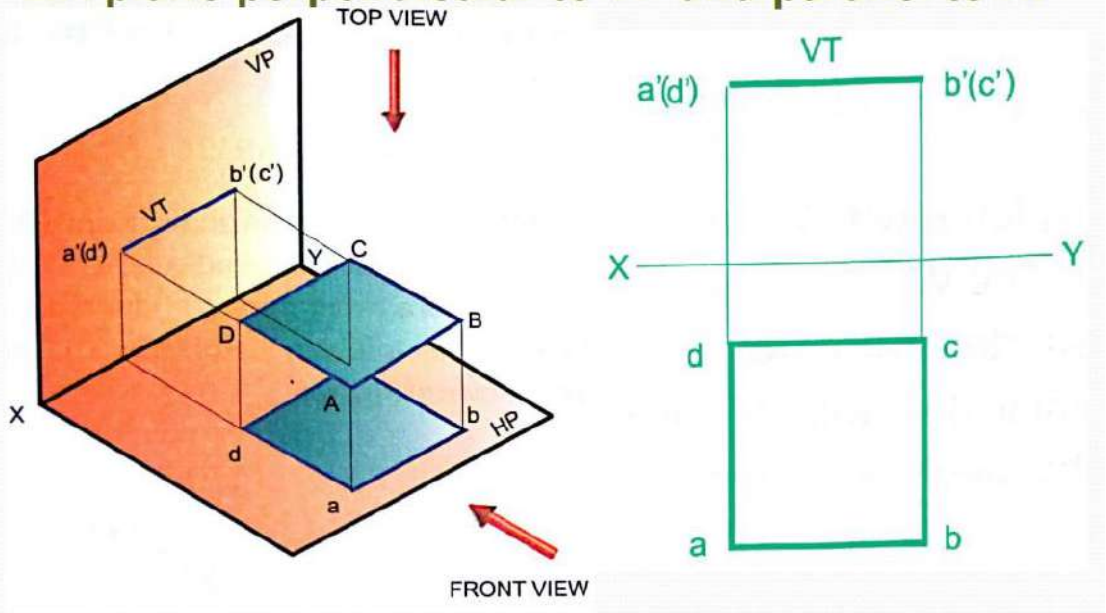
Notations of object in Planes

Object	Point
It's top view	a , b, c ,…
It's front view	a' , b', c',…
It's side view	a", b", c",…

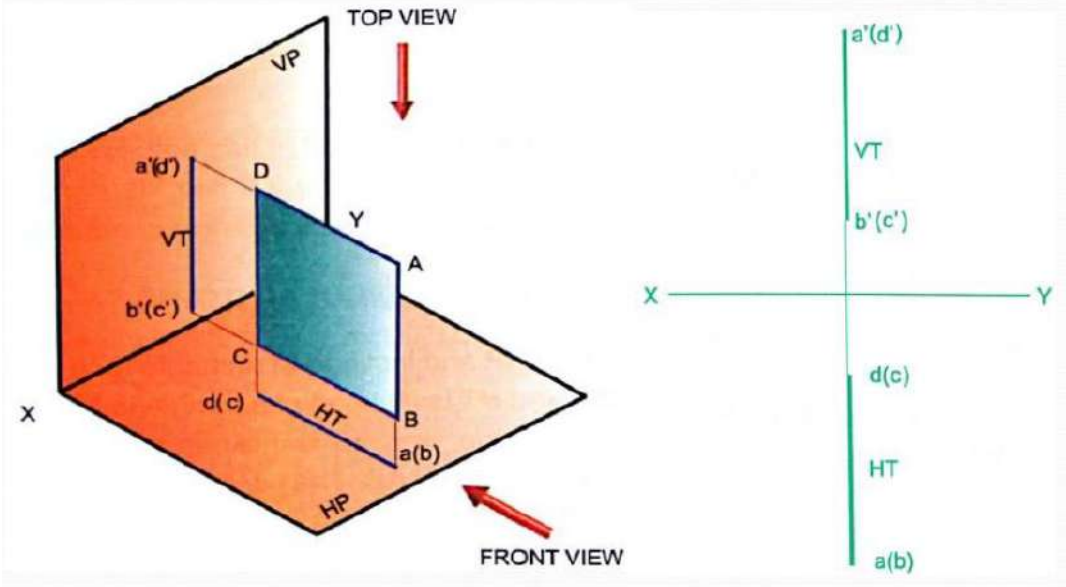
1.A plane perpendicular to HP and parallel to VP



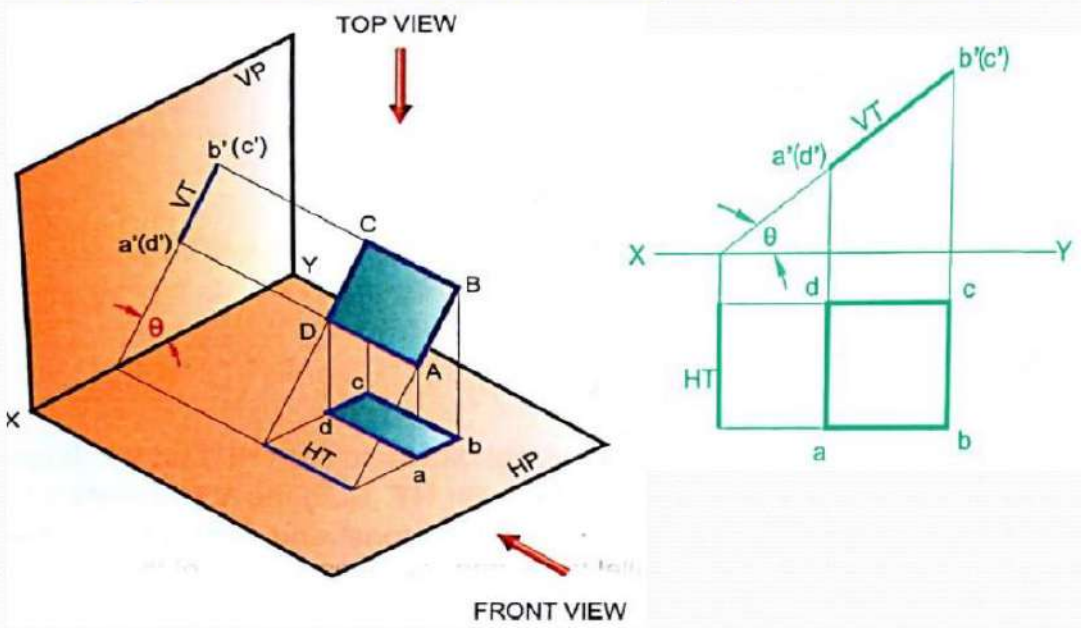
2.A plane perpendicular to VP and parallel to HP



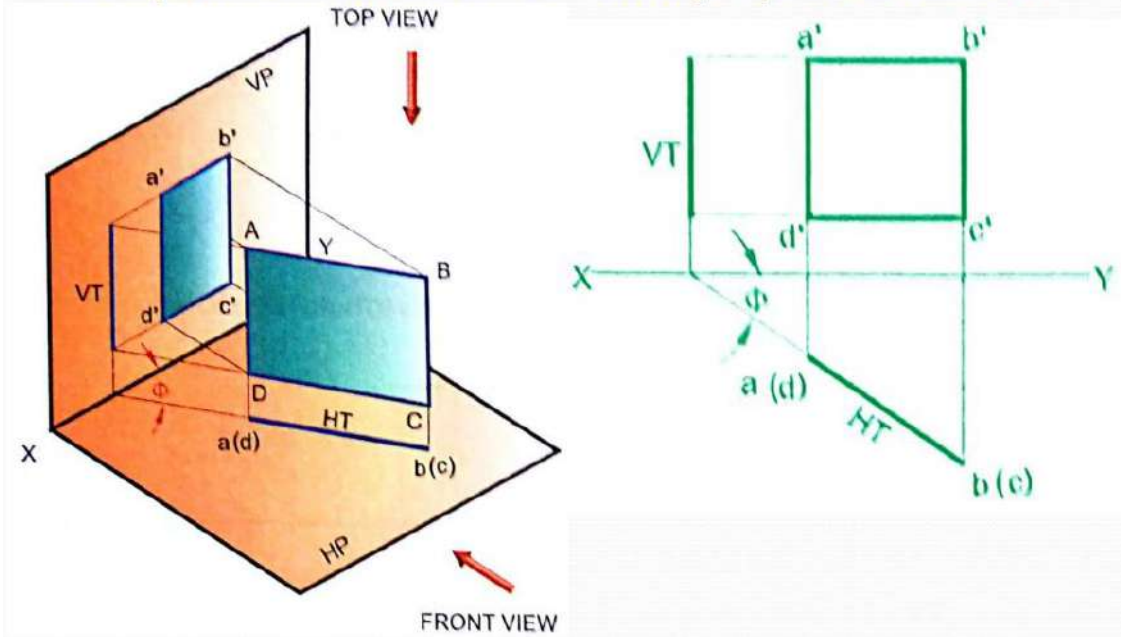
3.A plane perpendicular to both VP and HP



4. A plane inclined to HP and perpendicular VP



5. A plane inclined to VP and perpendicular HP



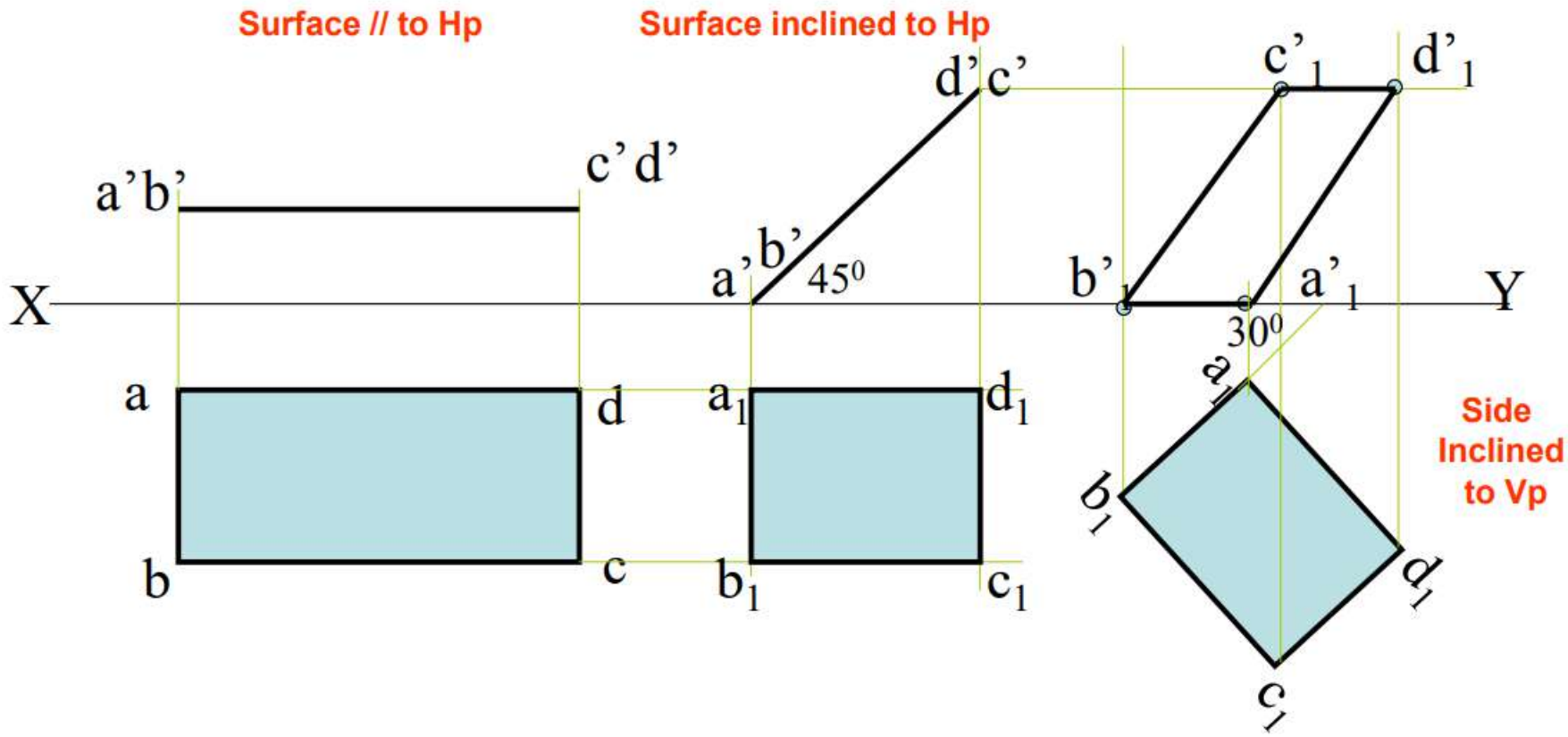
Procedure for projections of planes

In three steps/stages each problem can be solved:

1. Assume suitable conditions means // to HP or // to VP & draw FV & TV of initial position. (1st stage)
2. Now consider surface inclination i.e. ∠ to HP or ∠ to VP & draw FV & TV in 2nd stage.
3. Now consider side/edge inclination remaining i.e. ∠ to HP or ∠ to VP and draw final FV & TV in 3rd stage.

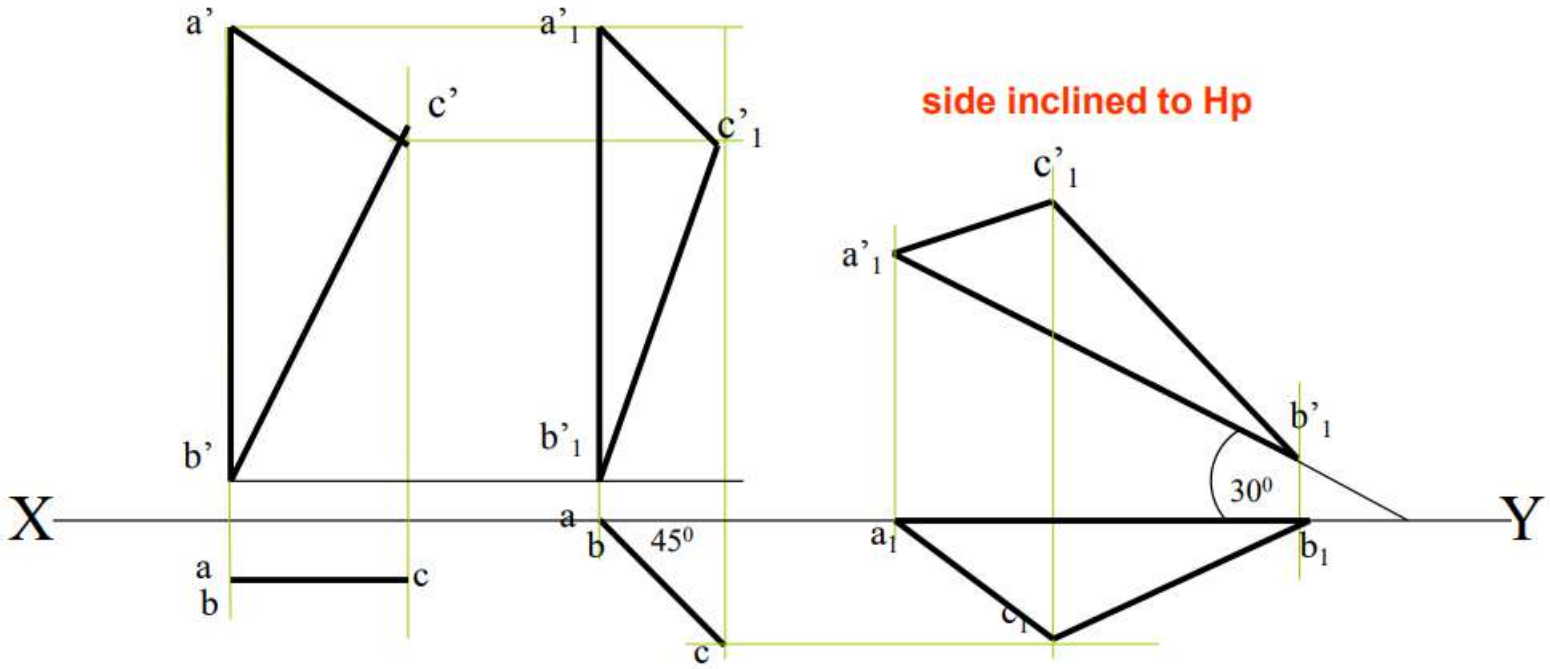
Problem 1

Rectangle 30mm and 50mm sides is resting on HP on one small side which is 30^0 inclined to VP,while the surface of the plane makes 45^0 inclination with HP. Draw it's projections.

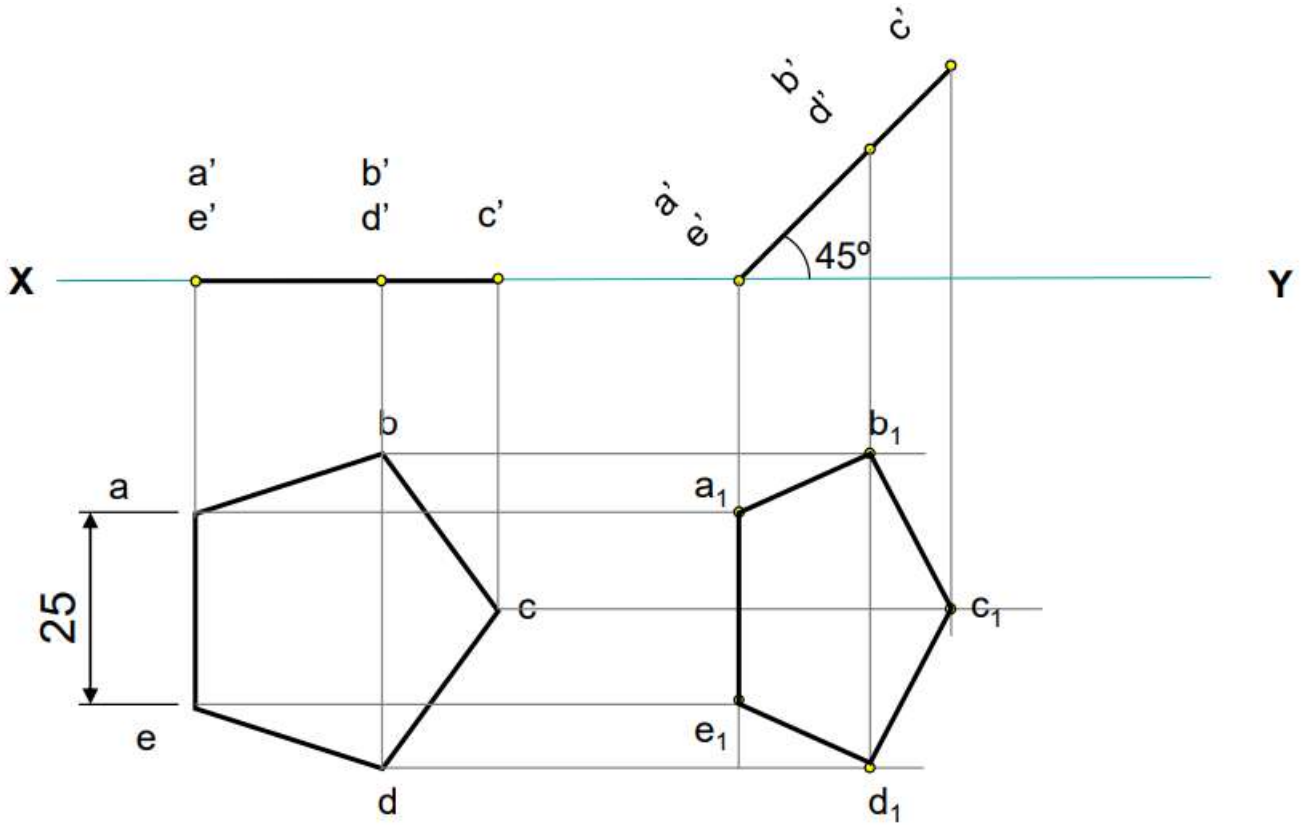


Problem 2

A $30^0 – 60^0$ set square of longest side 100 mm long, is in VP and 30^0 inclined to HP while it's surface is 45^0 inclined to VP.Draw it's projections



Problem 3 **A regular pentagon of 25mm side has one side on the ground. Its plane is inclined at 45º to the HP and perpendicular to the VP. Draw its projections**



Problem 4 **Draw the projections of a regular hexagon of 25mm sides, having one of its side in the H.P. and inclined at 60 to the V.P. and its surface making an angle of 45º with the H.P.**