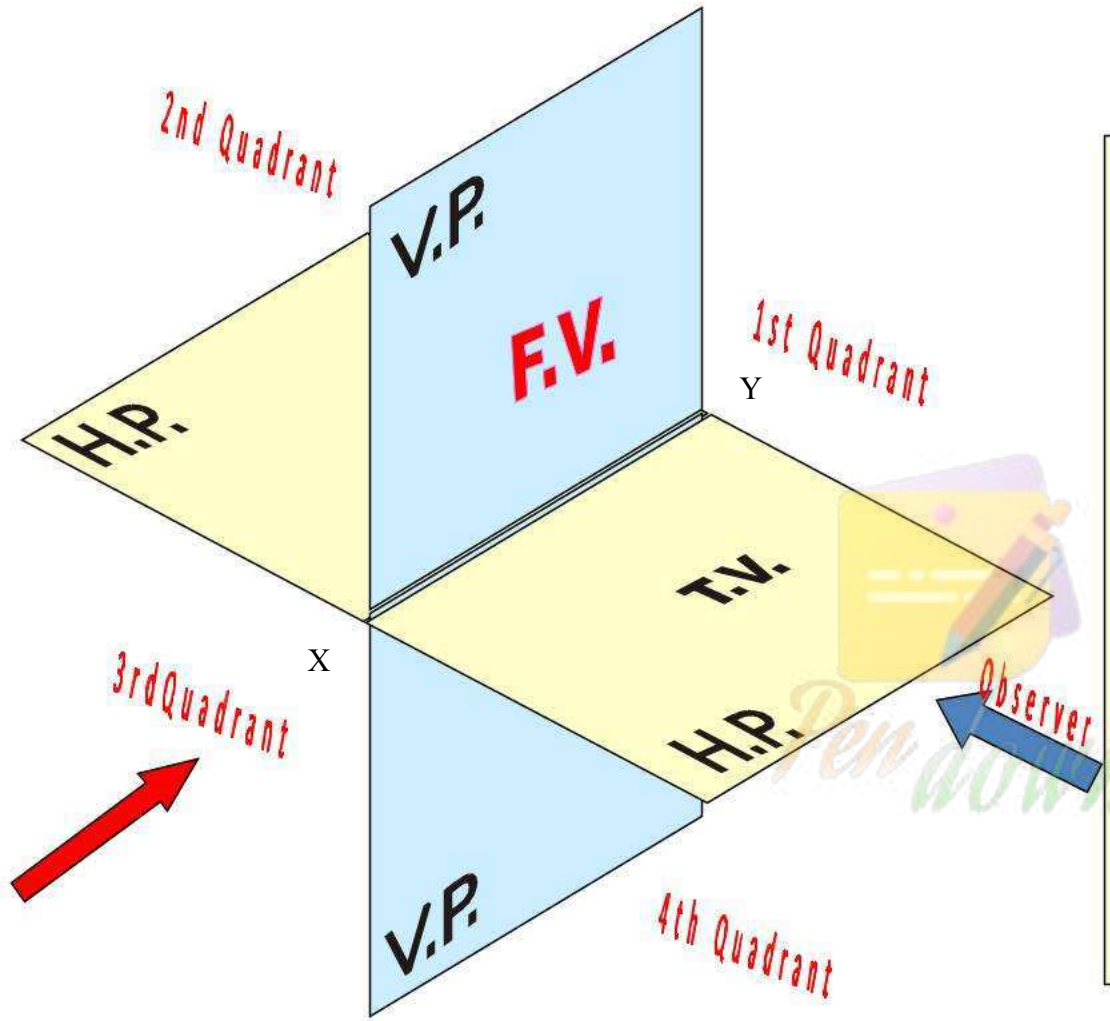
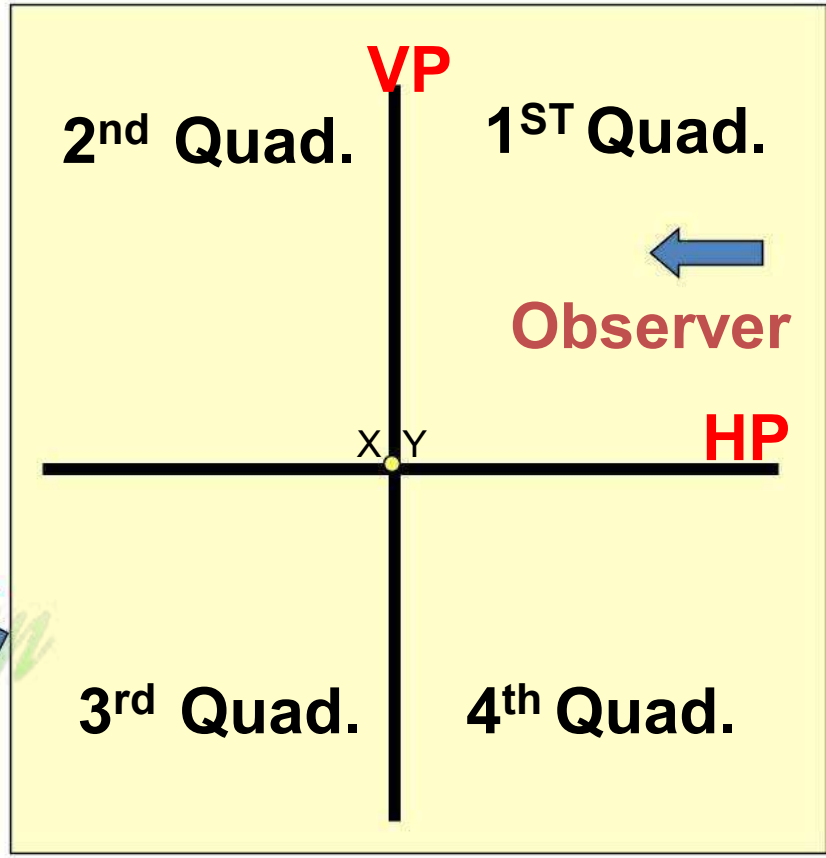
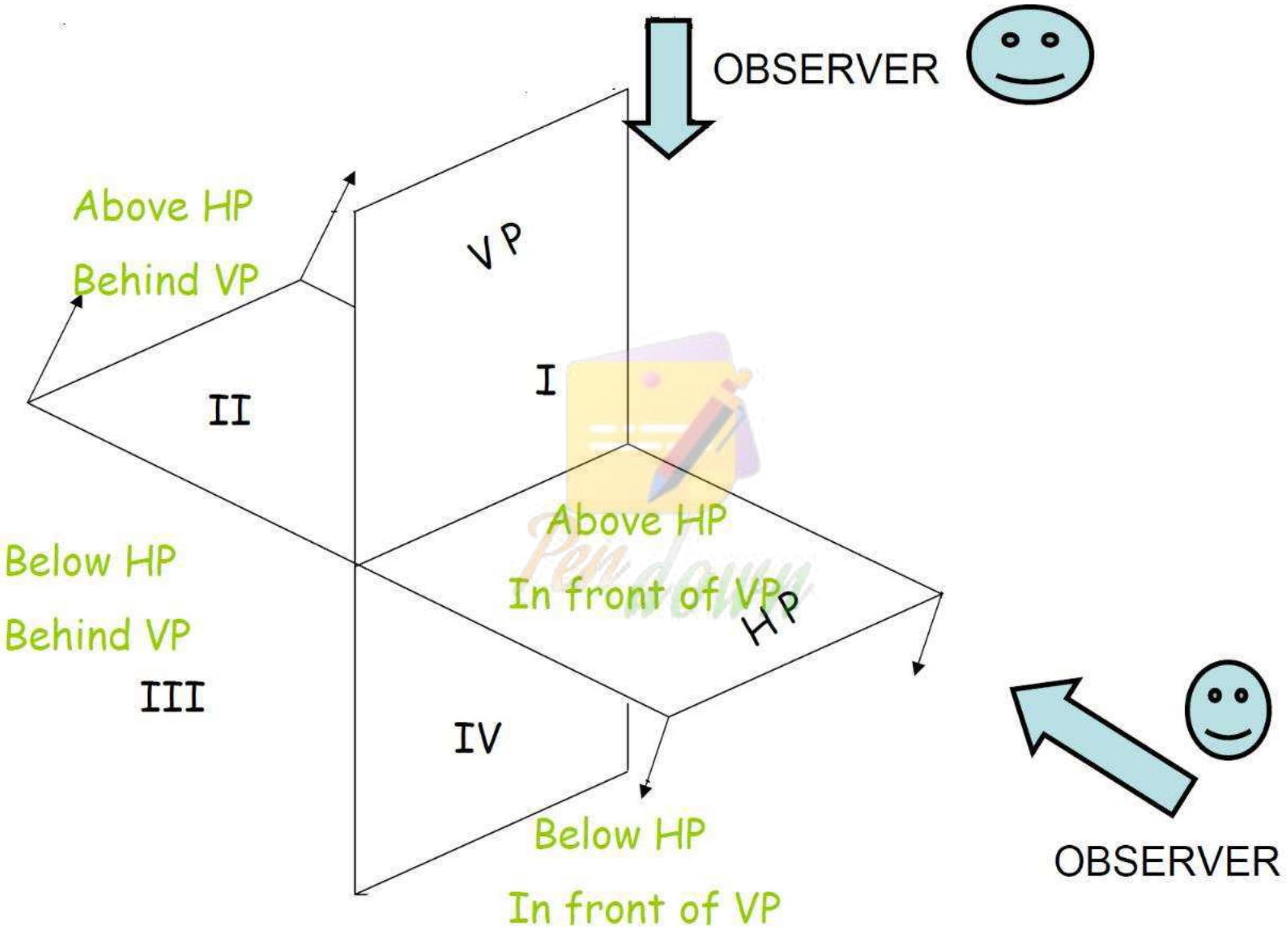
Projection of Points

Engineering Graphics


2nd Quadrant
V.P.
F.V.
1st Quadrant
H.P.
Y
T.V.
X
3rdQuadrant
H.P.
Observer
V.P.
4th Quadrant


VP
2nd Quad.
1ST Quad.
Observer
X Y
HP
3rd Quad.
4th Quad.

RED

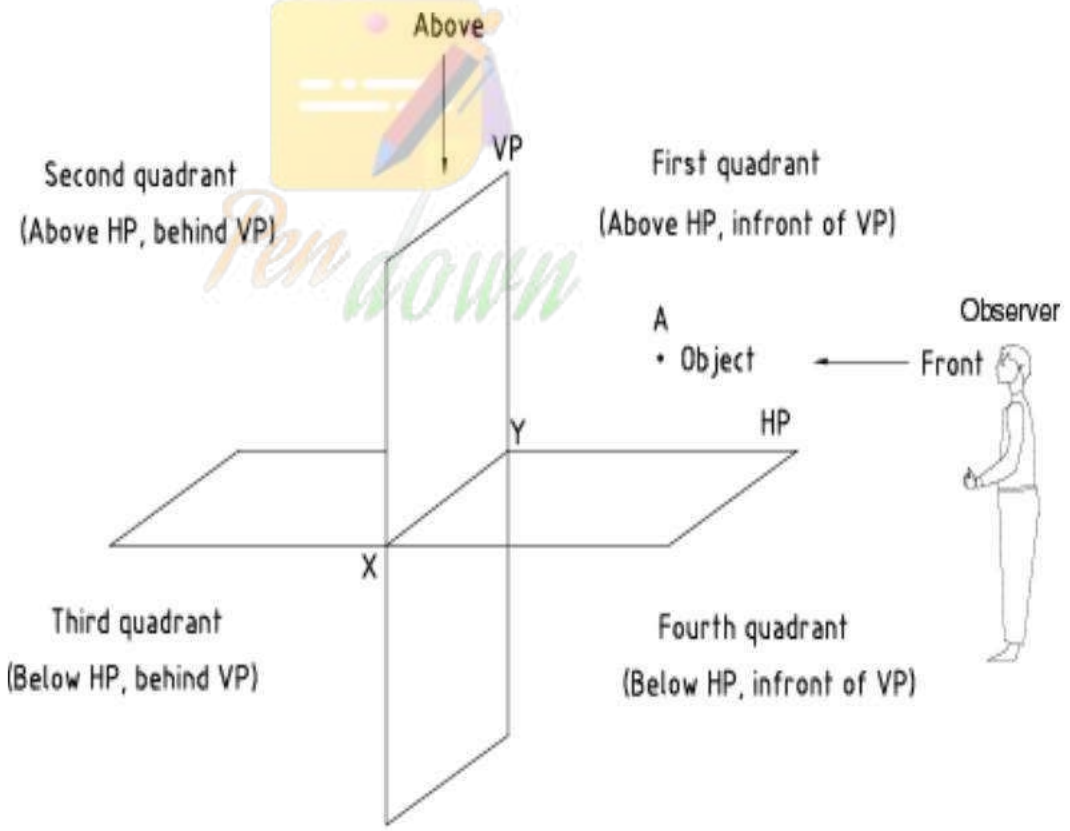

OBSERVER
Above HP
Behind VP
VP
II
I
Above HP
In front of VP
Below HP
Behind VP
III
HP
IV
Below HP
In front of VP
OBSERVER

Projection Planes (VP & HP)

Image of an object observed in front view (Elevation) is projected onto Vertical Plane (VP).

Image of an object observed in top view (Plan) is projected onto Horizontal Plane (HP)

Intersection line of VP & HP is the XY line.



NOTATIONS

Following notations should be followed while naming different views in orthographic projections.

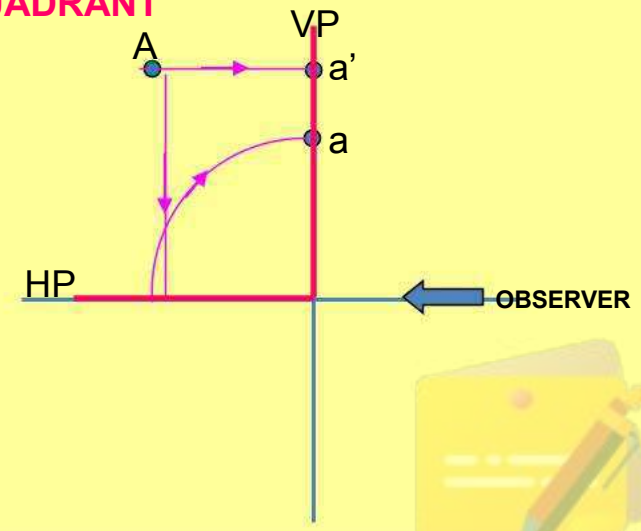
OBJECT	POINT A
IT'S TOP VIEW	a
IT'S FRONT VIEW	a'
IT'S SIDE VIEW	a"

Same system of notations should be followed incase numbers, like 1, 2, 3 – are used.

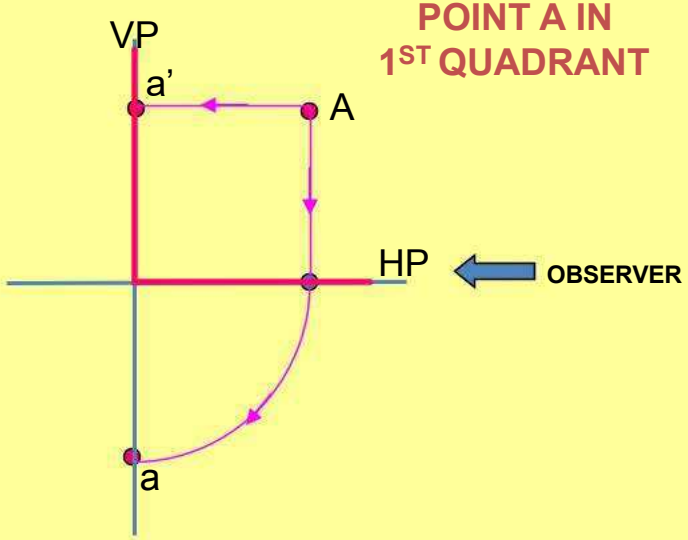
Point A is Placed In different quadrants and it's Fv & Tv are brought in same plane for Observer to see clearly.
Fv is visible as it is a view on VP. But as Tv is is a view on Hp, it is rotated downward 90^0, In clockwise direction.The In front part of Hp comes below xy line and the part behind Vp comes above.

Observe and note the process.

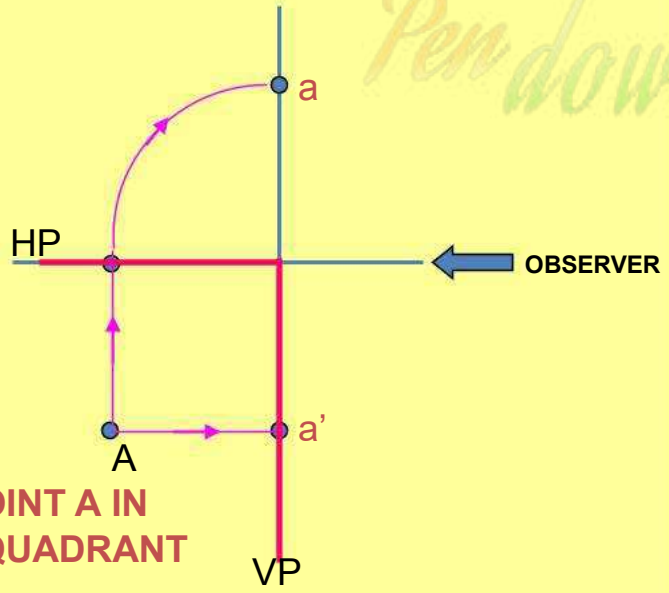
POINT A IN 2ND QUADRANT



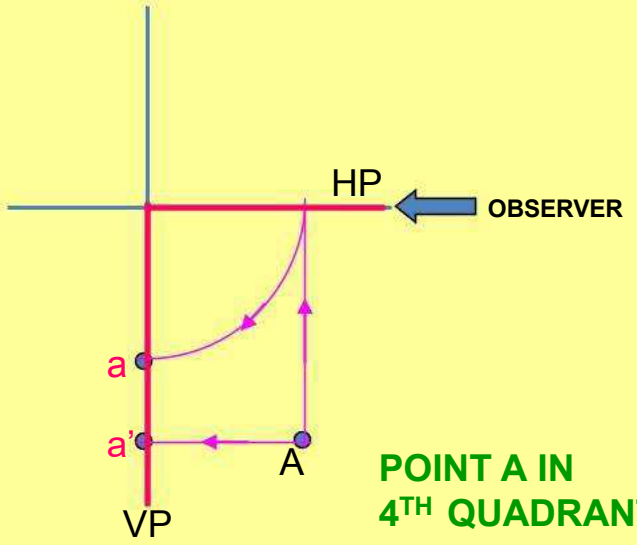
POINT A IN 1ST QUADRANT



POINT A IN 3RD QUADRANT

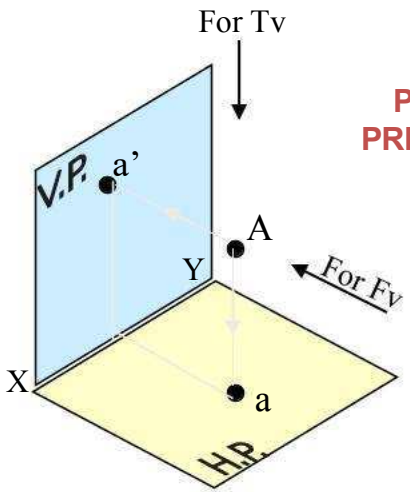


POINT A IN 4TH QUADRANT



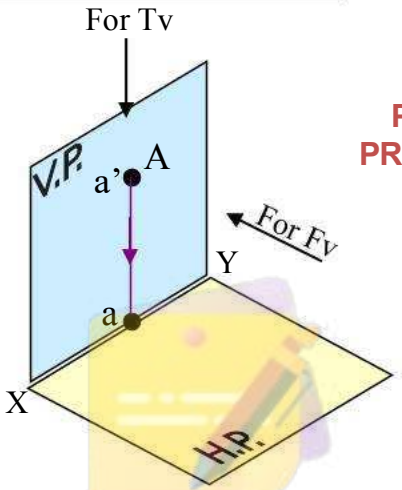
PROJECTIONS OF A POINT IN FIRST QUADRANT.

POINT A ABOVE HP & INFRONT OF VP



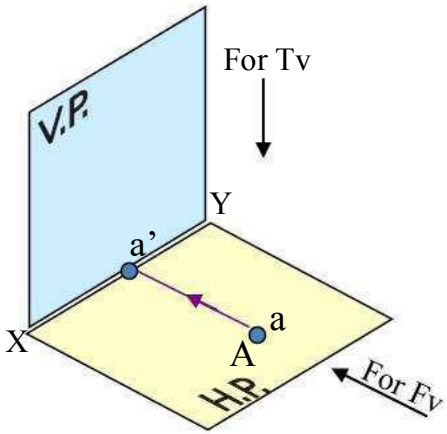
PICTORIAL PRESENTATION

POINT A ABOVE HP & IN VP



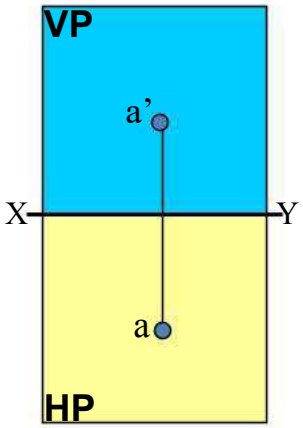
PICTORIAL PRESENTATION

POINT A IN HP & INFRONT OF VP

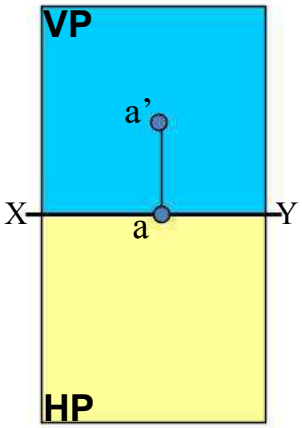


ORTHOGRAPHIC PRESENTATIONS OF ALL ABOVE CASES.

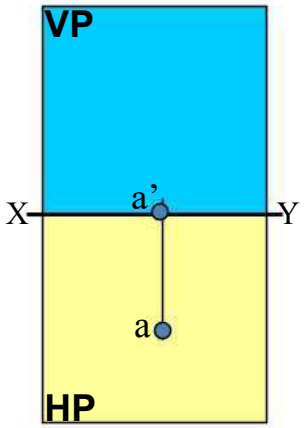
Fv above xy, Tv below xy.



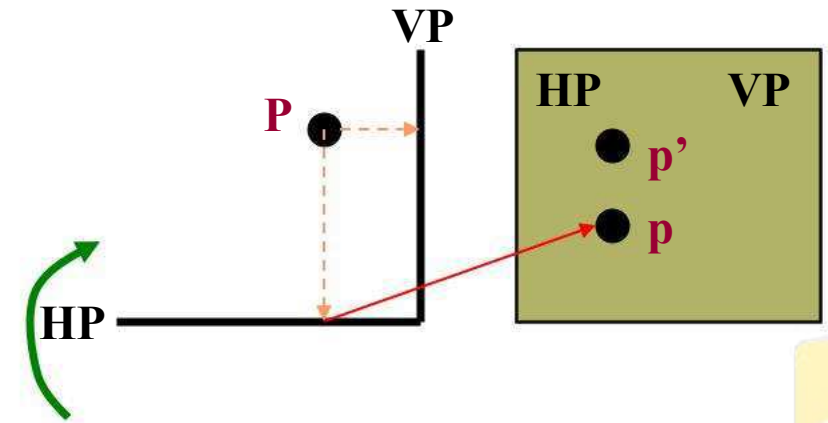
Fv above xy, Tv on xy.



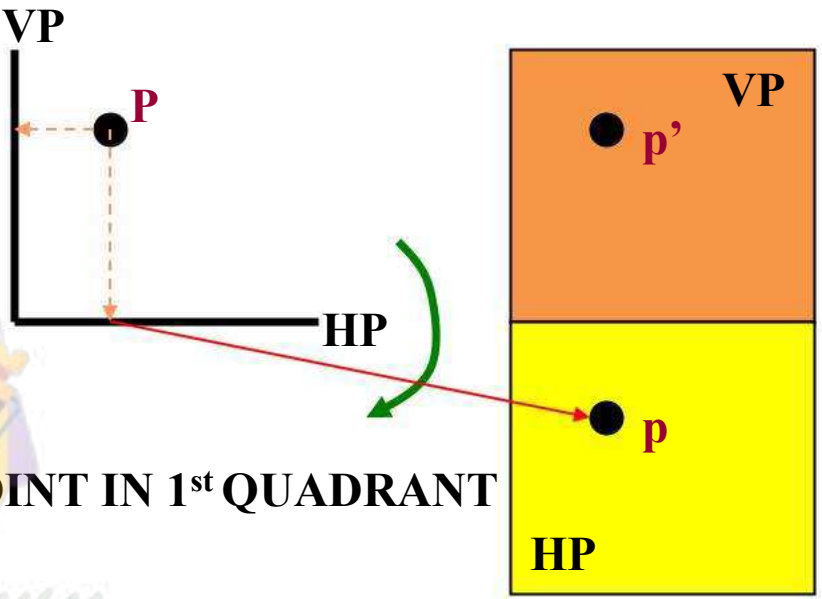
Fv on xy, Tv below xy.



PROJECTIONS OF A POINT IN THE 4 QUADRANTS



POINT IN 2nd QUADRANT

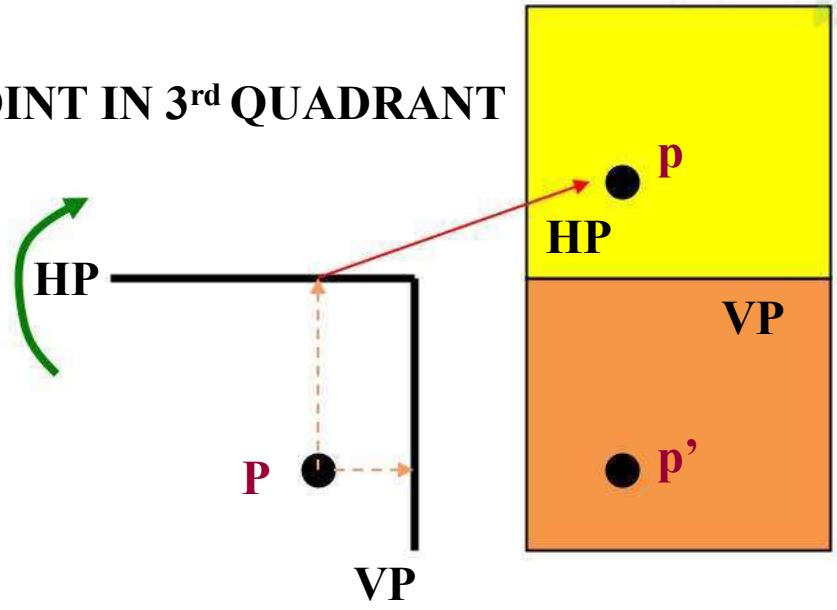


POINT IN 1st QUADRANT

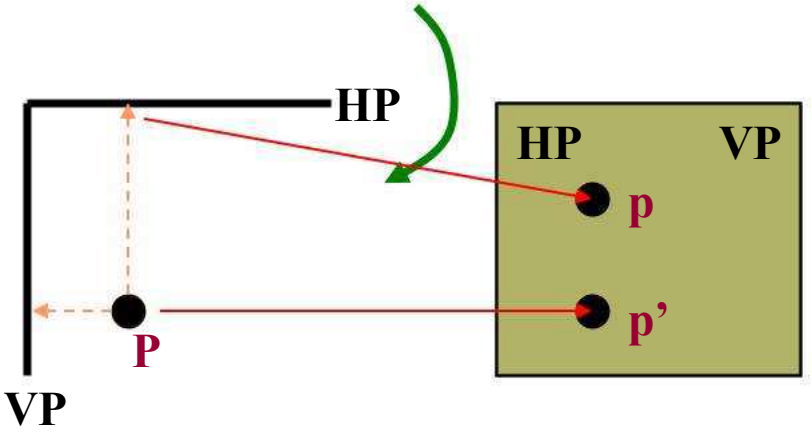
p: TOP VIEW

P': FRONT VIEW

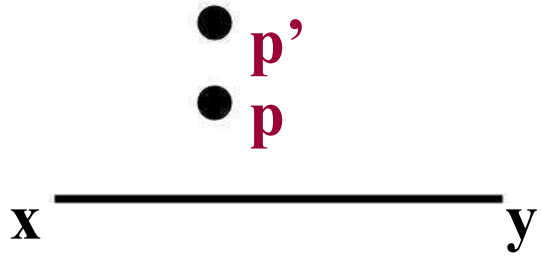
POINT IN 3rd QUADRANT



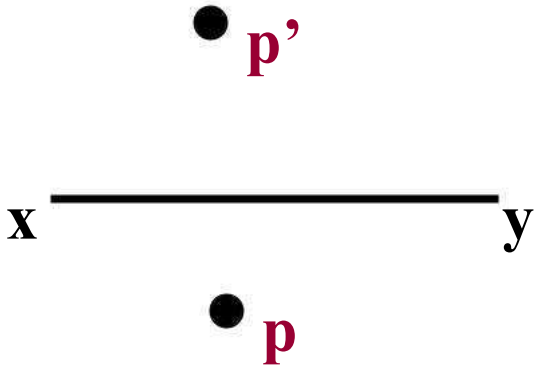
POINT IN 4th QUADRANT



How you will draw on the sheet



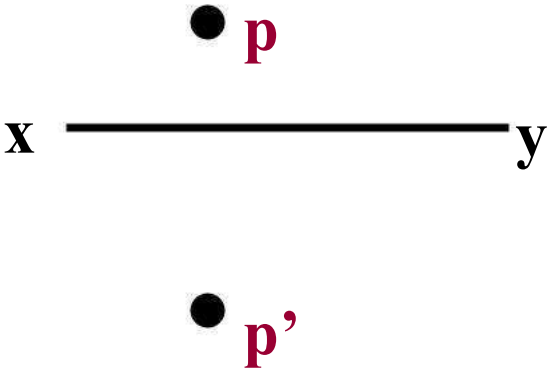
POINT IN 2nd QUADRANT



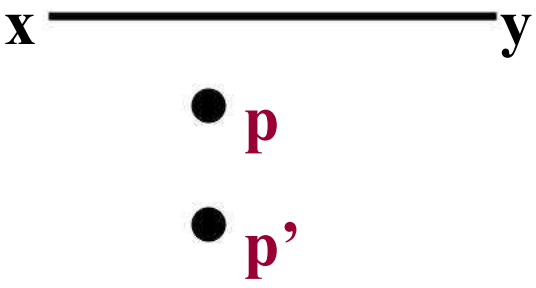
POINT IN 1st QUADRANT

p: TOP VIEW

P': FRONT VIEW



POINT IN 3rd QUADRANT



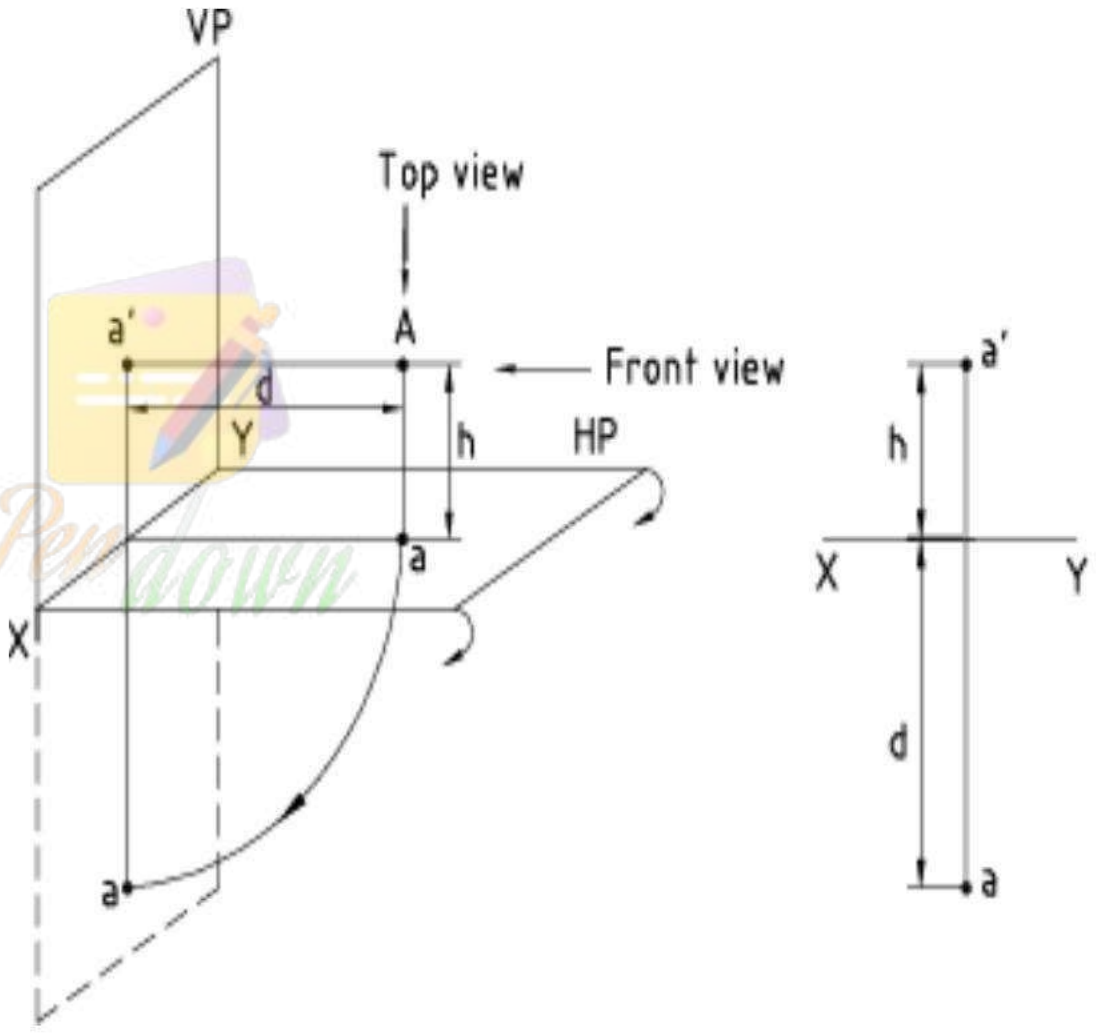
POINT IN 4th QUADRANT

Drawing Projections of a Point

Similar to the previous object, now a point is placed and its top & front view images are projected onto HP & VP.

HP is rotated clockwise for 90º to get it below XY line.

In your drawing sheet, draw XY line, then mark a point in front view, above XY line and top view, below XY line.



Example: A point A is 20mm above HP and 30mm in front of VP. Draw its projections.

Follow the same procedure discussed earlier, project the top & front view images onto HP & VP.

Rotate the HP in clockwise for 90º to get it below XY line.

In your drawing sheet, draw XY line, mark a point in the front view, above XY line and the top view, below XY line.