UNIT –II

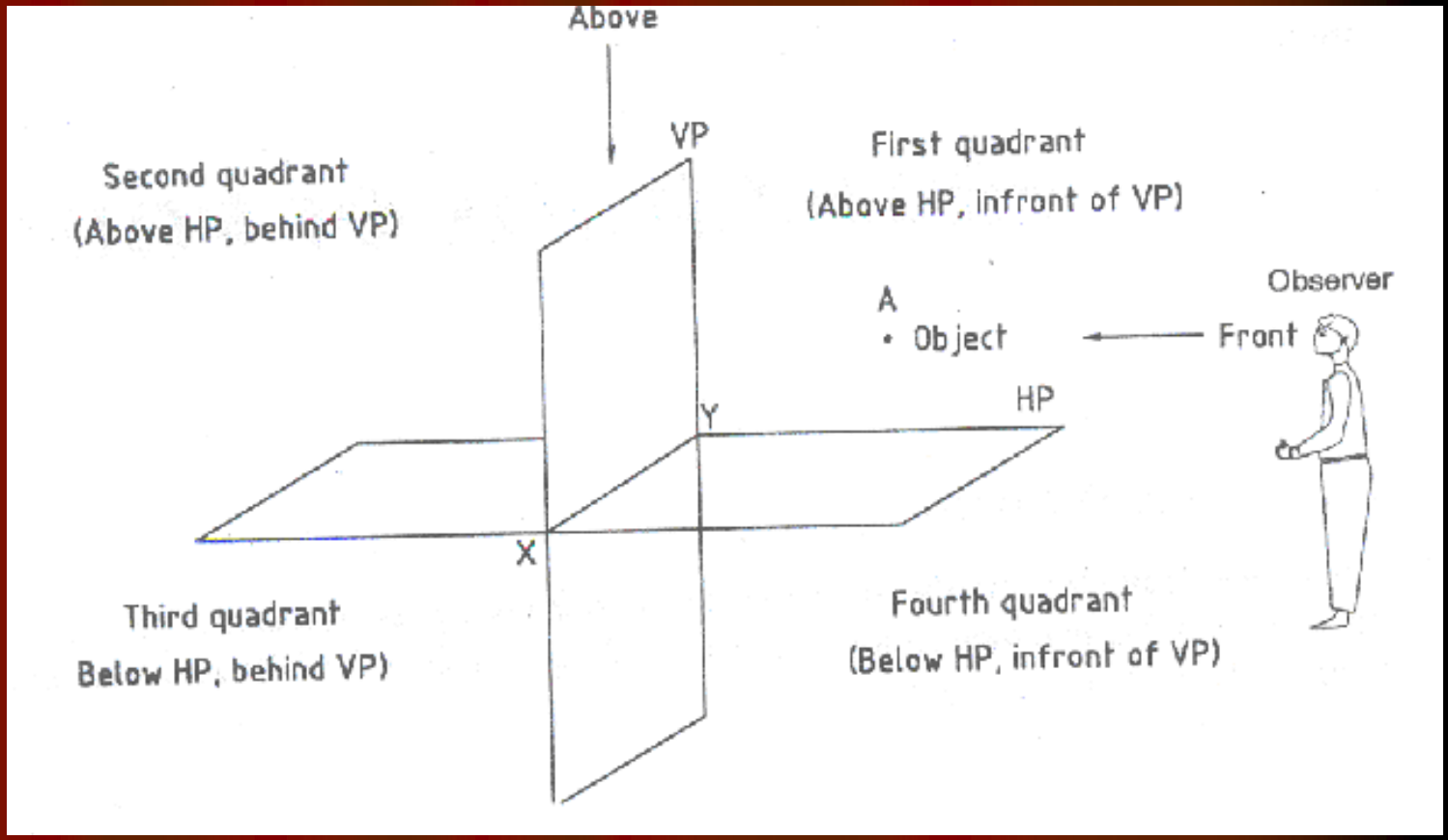
PROJECTIONS OF POINTS

INTRODUCTION

(Week – 6)

- In engineering graphics, two principal planes (HP & VP) are used to get the projection of an object (object may be point, line, plane or solid)
- Points form the basic shape of objects. A point may be considered physically real and can be located by small dot or a small cross.
- A point in space may lie in any one of the four quadrants formed by the two principal planes (HP & VP).

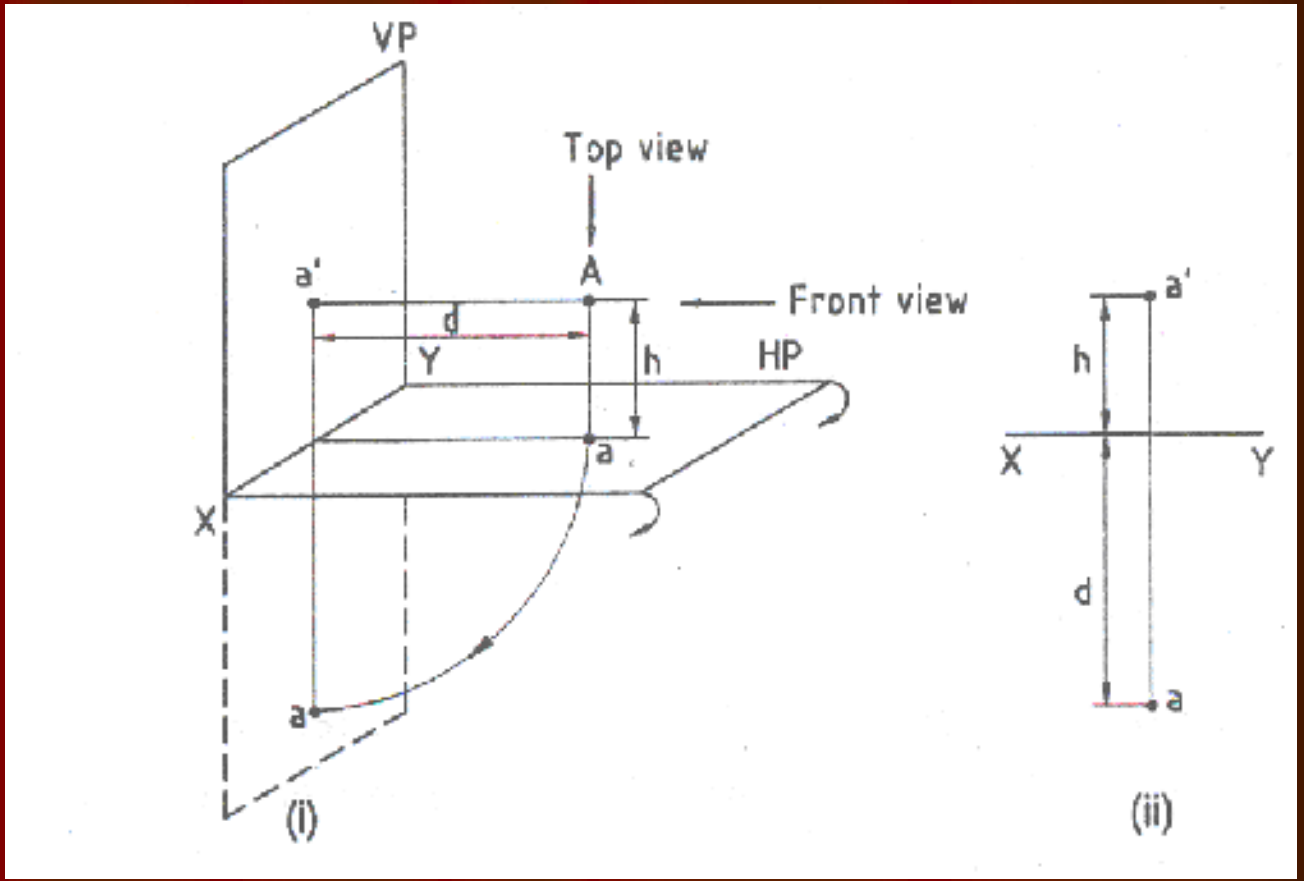
FOUR QUADRANTS



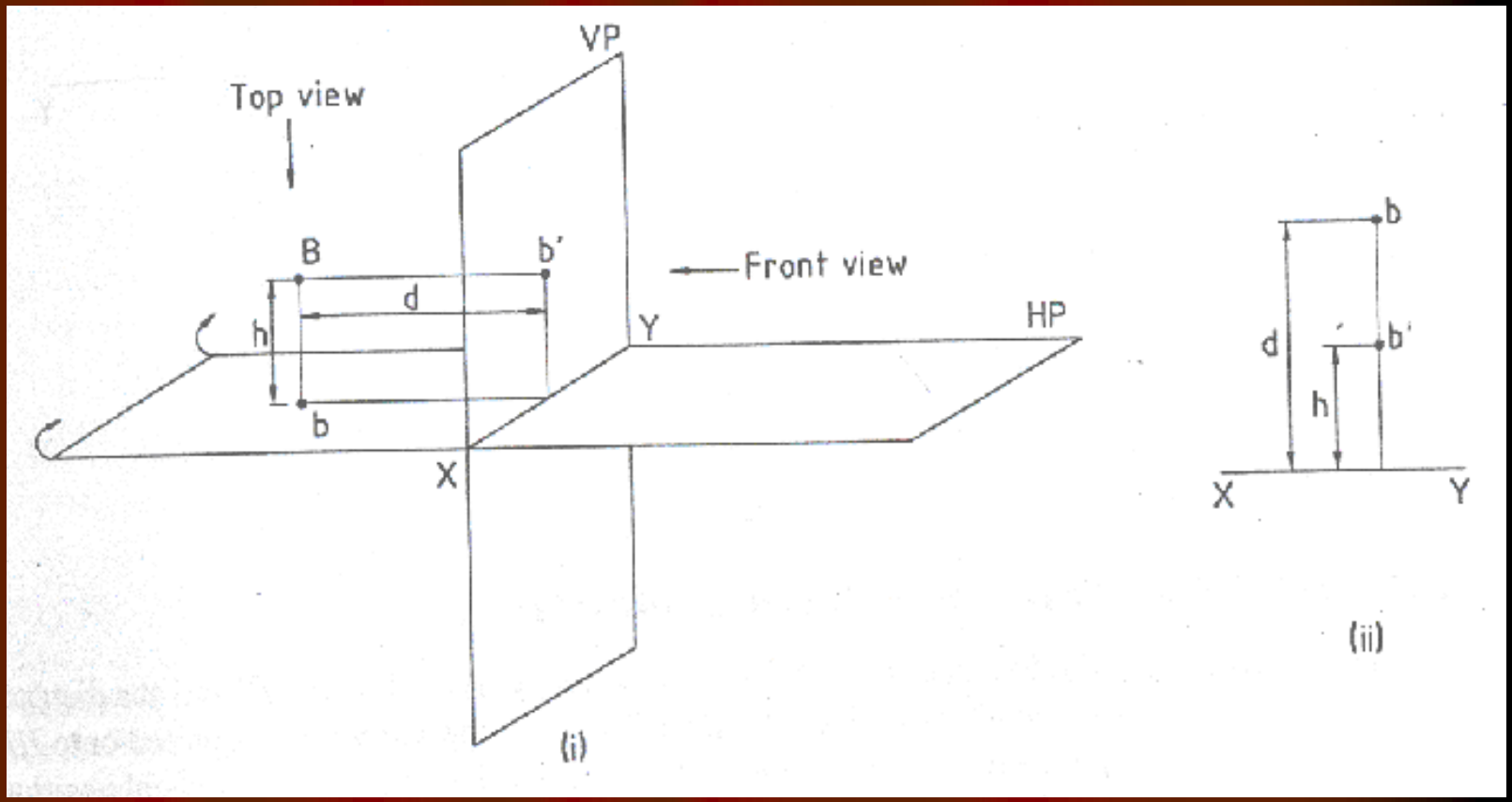
LOCATIONS OF A POINT

- When a point lies in the First Quadrant, it will be above HP and in front of VP.
- When a point lies in the Second Quadrant, it will be above HP and behind VP.
- When a point lies in the Third Quadrant, it will be below HP and behind VP.
- When a point lies in the Fourth Quadrant, it will be below HP and in front of VP.

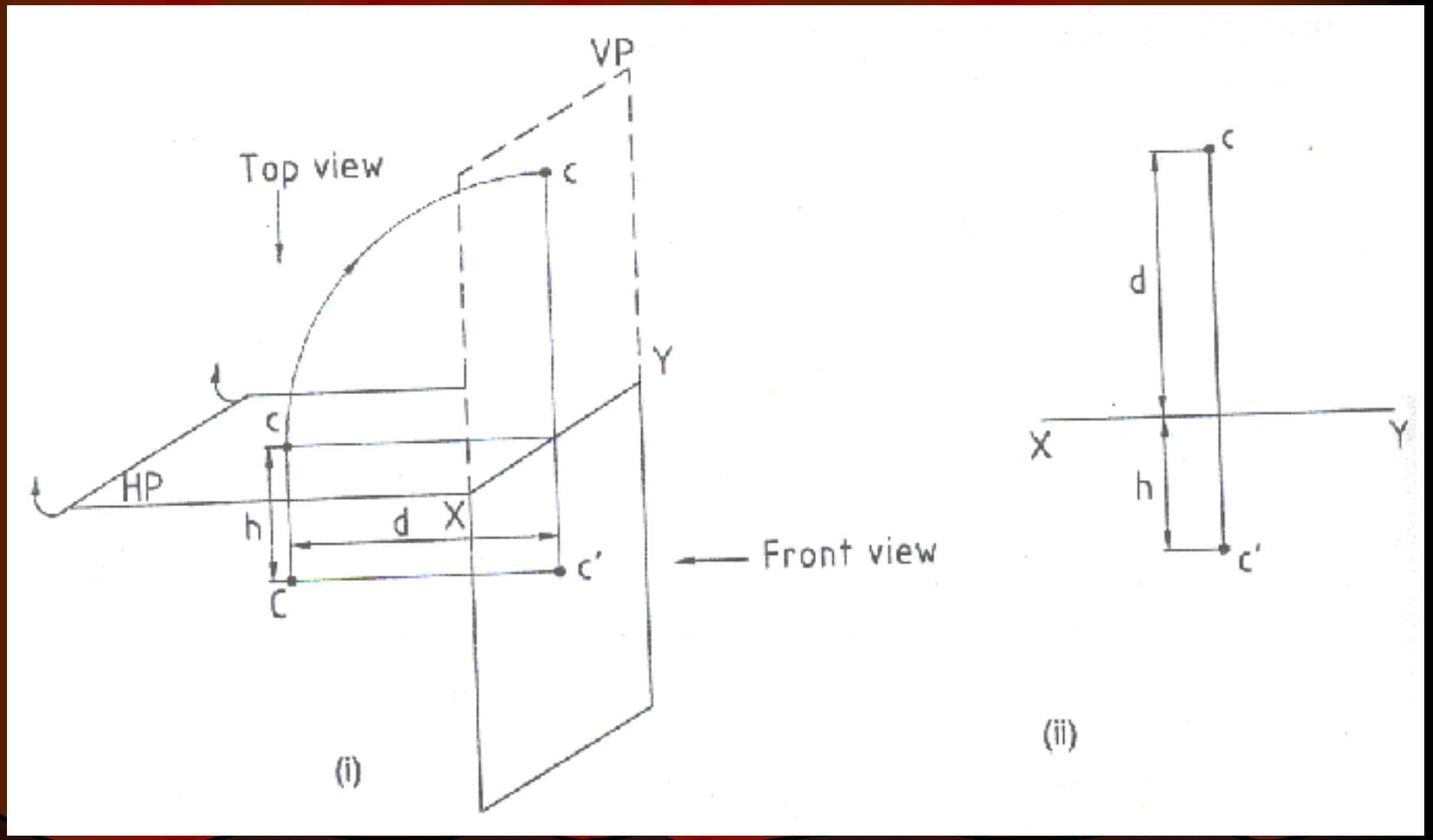
Projections of a Point in First Quadrant



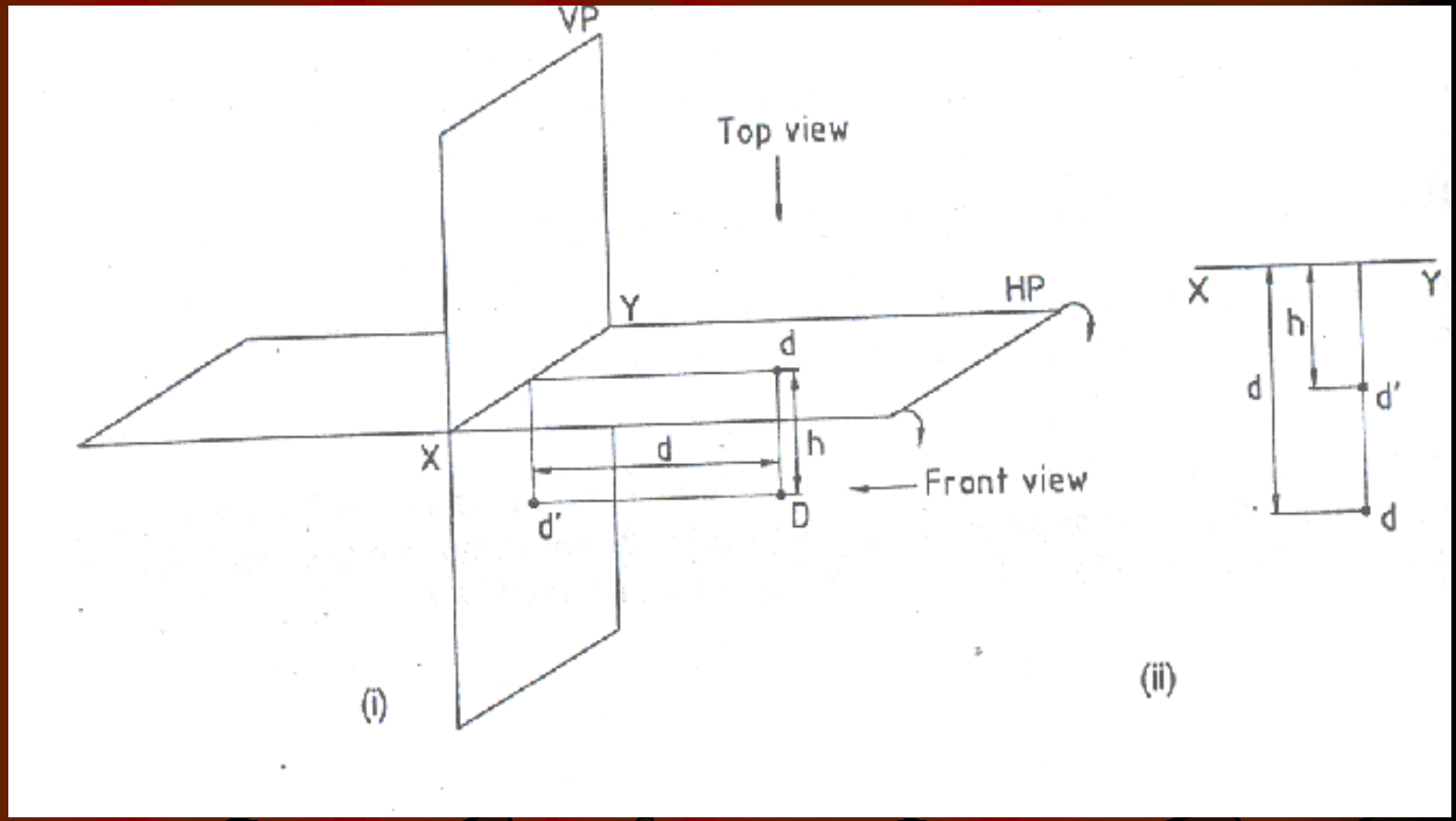
Projections of a Point in Second Quadrant



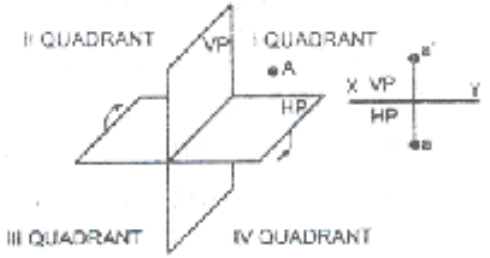
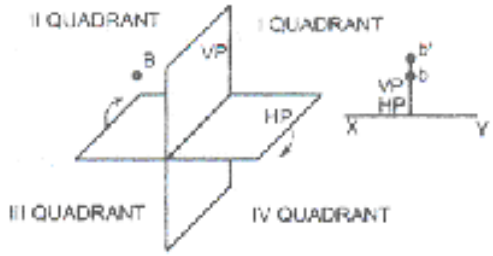
Projections of a Point in Third Quadrant



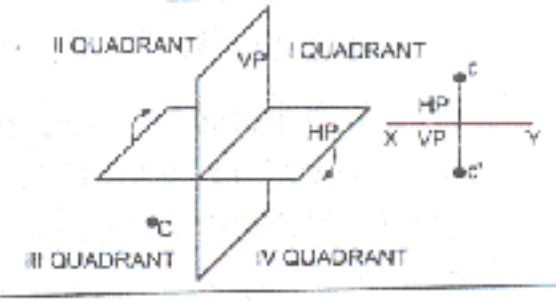
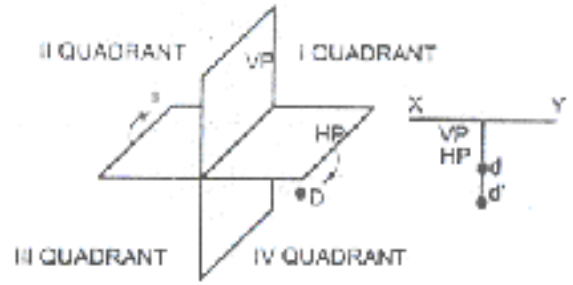
Projections of a Point in Fourth Quadrant



Summary of Projection of Points in different Quadrants

Quadrant	Position of the points	Front View	Top view	Illustration
First	Above H.P & infront of V.P	Above XY line	Below XY line	
Second	Above H.P. & Behind V.P.	Above XY line	Above XY line	

Summary of Projection of Points in different Quadrants (Week 6)

Quadrant	Position of the points	Front View	Top view	Illustration
Third	Below H.P. & Behind V.P.	Below XY line	Above XY line	
Fourth	Below H.P. & infront of V.P	Below XY line	Below XY line	

QUESTIONS AND SOLUTIONS

1. Draw the projections of a point **A** lying on VP & 55mm above HP.
2. Draw the projections of a point **F** which lies in both the HP & VP.
3. A point B is 45mm above HP & 60mm behind VP. Draw its projections
4. A point **C** is 35mm below HP & 25mm behind VP. Draw its projections
5. A Point **D** is 45mm below HP & 60mm infront of VP. Draw its projections

Continue...

1. Mark the projections of the following points on a common reference line keeping the projectors 25mm apart.
    1. A,25mm above HP and 35mm infront of VP.
    2. B,25mm above HP and 40mm behind VP.
    3. C,30mm below HP and 45mm behind VP.
    4. D,30mm below HP & 40mm infront of VP.
    5. E, 25mm above Hp & in VP.
    6. F, 35mm below HP & in VP.
    7. G,25mm infront of VP & in HP.
    8. H,20mm behind VP & in HP.

Continue…

1. Draw the projections of the following points on the same reference line, keeping the projectors 30mm apart.

   1. A,30mm above HP and 30mm infront of VP.

   2.B, 40mm above HP and 30mm behind VP.

   3. C, 45mm below HP and 30mm behind VP.

   4. D, 40mm below HP and 30mm in front of VP.

   5. E, 40mm above HP and in VP.

   6. F, 45mm below HP and in VP.

   7. G, 40mm in front of VP and in HP.

   8.H,45mm behind VP and in HP.

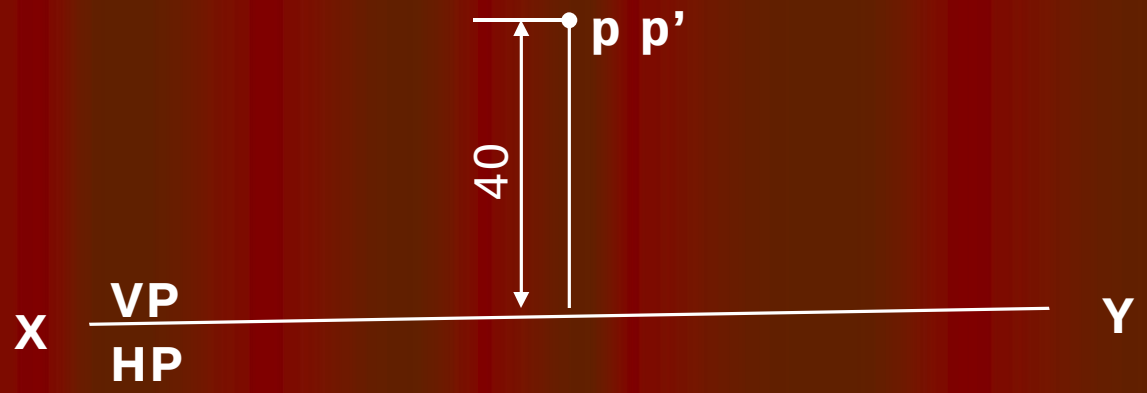
   9.I, on both HP and VP.

QUESTIONS

1. Draw the projections of a point **B** lying on HP & 55mm infront of VP.
2. Draw the projections of a point Q lying on VP & 58mm above HP.
3. A point S is 35mm above HP & 55mm behind VP. Draw its projections.
4. A point D is 35mm below HP & 35mm behind VP. Draw its projections.
5. A Point M is 60mm below HP & 45mm infront of VP. Draw its projections.

Another type of Question

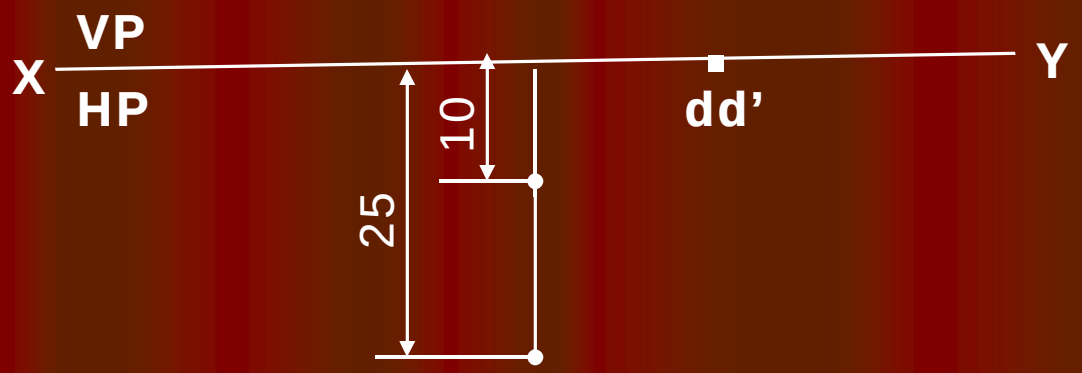
- Looking at figure write down the position of point P with respect to HP and VP.



CONTINUE...

QUESTION:-

- State the position of the following points and state the quadrant. All dimensions are given in mm.



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