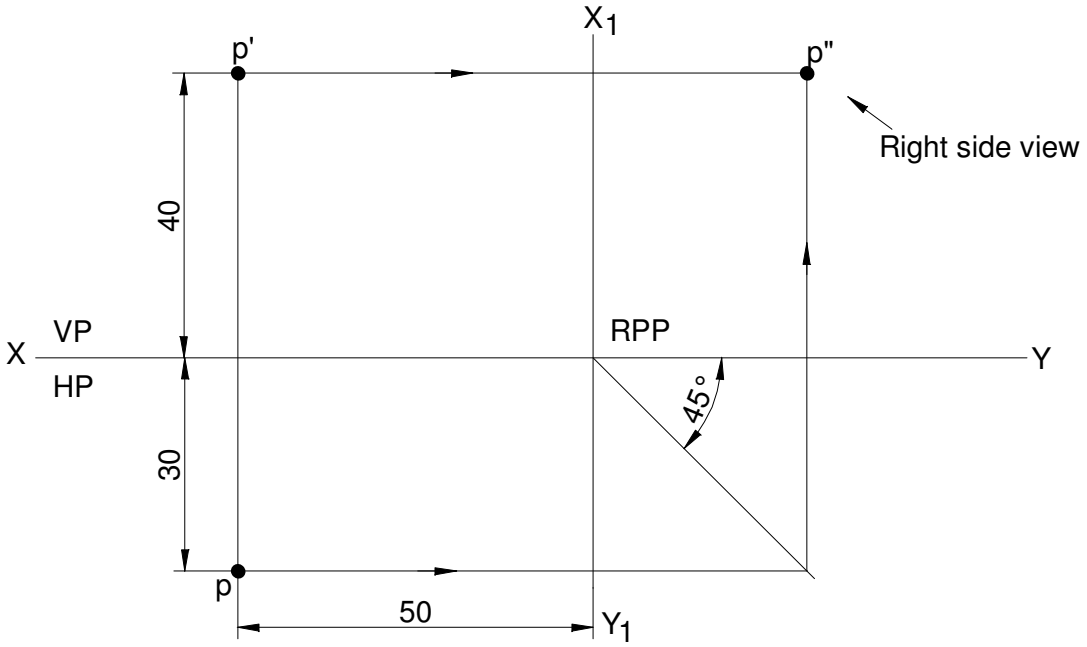
Projections of Points

-Girish Hanumaiah

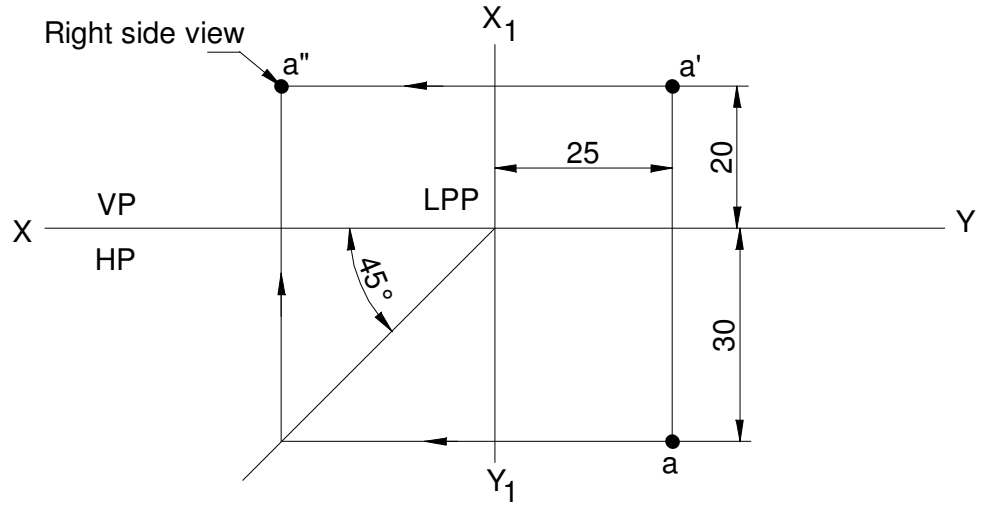
1. (15) A point P is 30 mm infront of VP, 40 mm above HP and 50 mm from RPP. Draw its projections.

Solution:



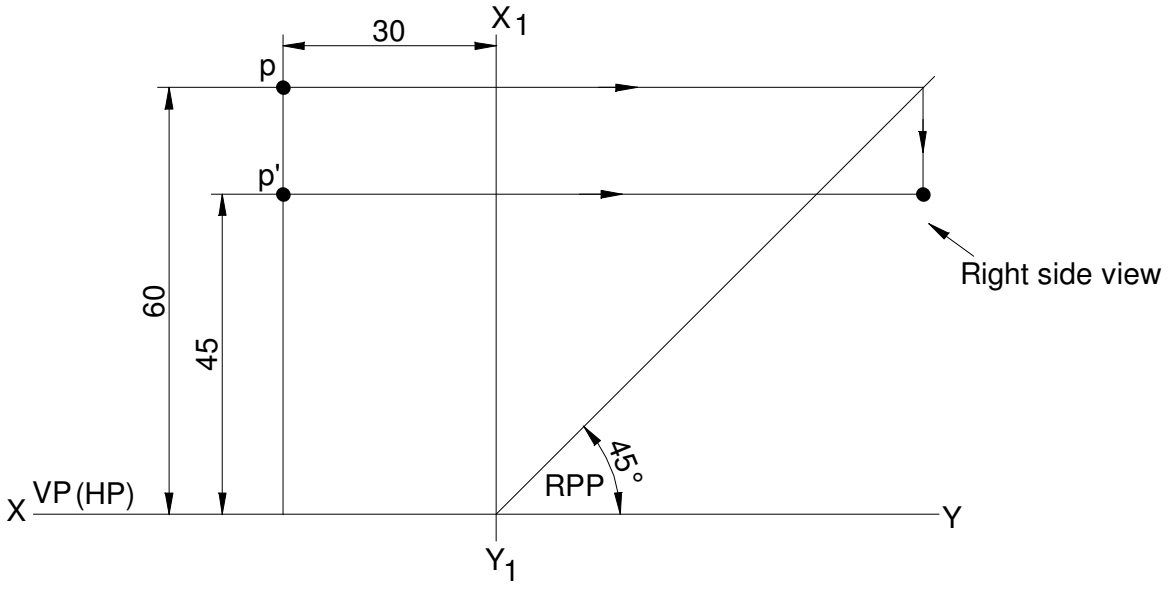
2. (18), (42) A point is 30 mm infront of VP, 20 mm above HP and 25 mm infront / behind / from LPP. Draw its projects and name the side view.

Solution:



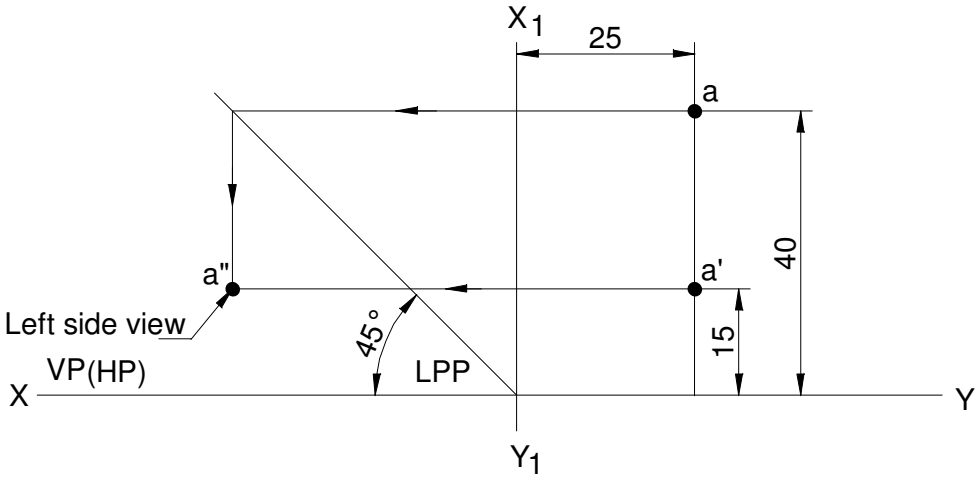
3. (16) A point P is 45 mm above HP, 60 mm behind VP and 30 mm from RPP. Draw the three principles view of the point. Also state the quadrant in which it lies.

Solution:



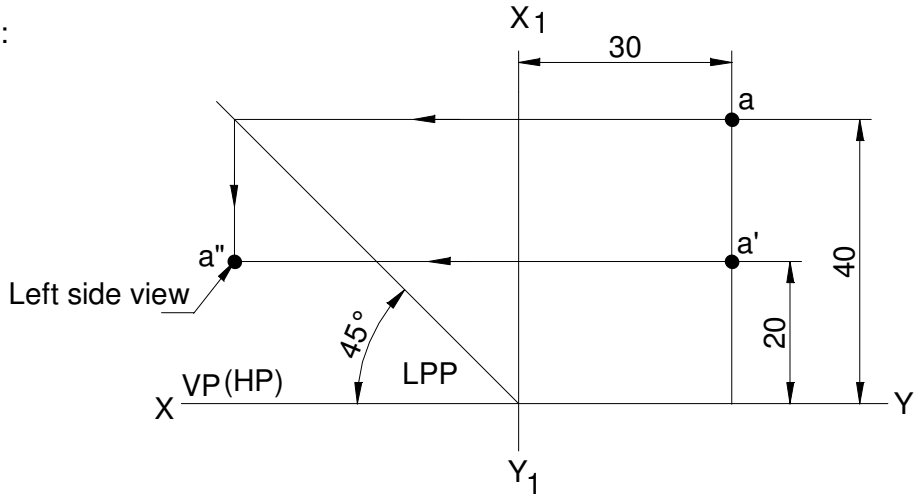
4. (19) A point is 40 mm behind VP, 15 mm above HP and 25 mm infront / behind / from LPP. Draw its projections and name the side view.

Solution:



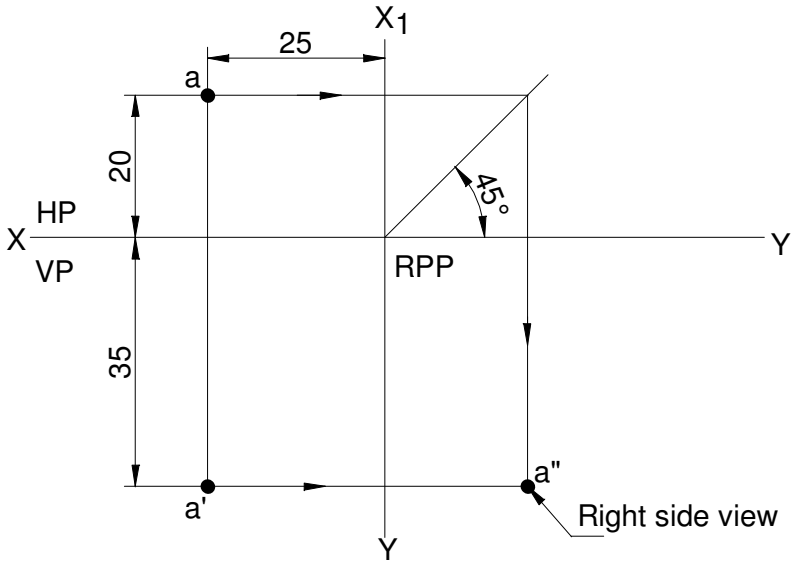
5. (43) A point is 40 mm behind VP, 20 mm above HP and 30 mm infront / Behind / from LPP. Draw its projections and name the side view.

Solution:



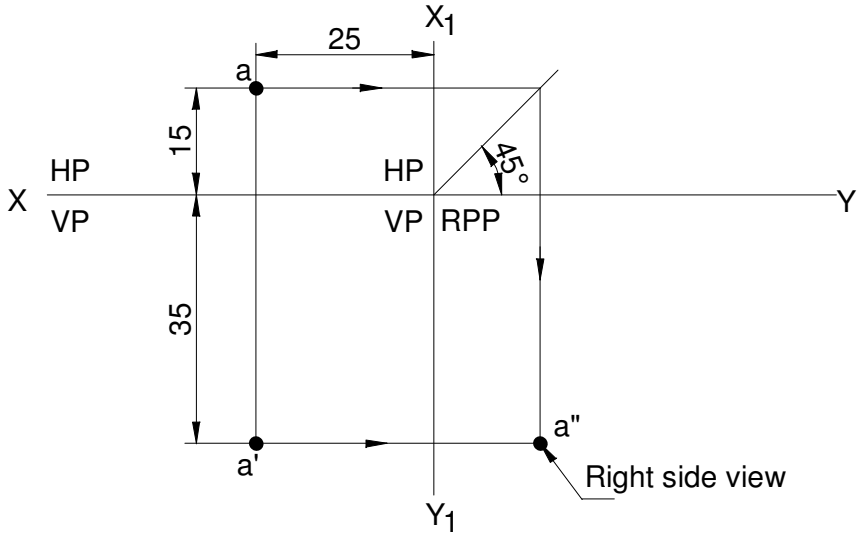
6. (22) A point is 35 mm below HP, 20 mm behind VP and 25 mm behind / infront / from RPP. Draw its projections and name the side view.

Solution:



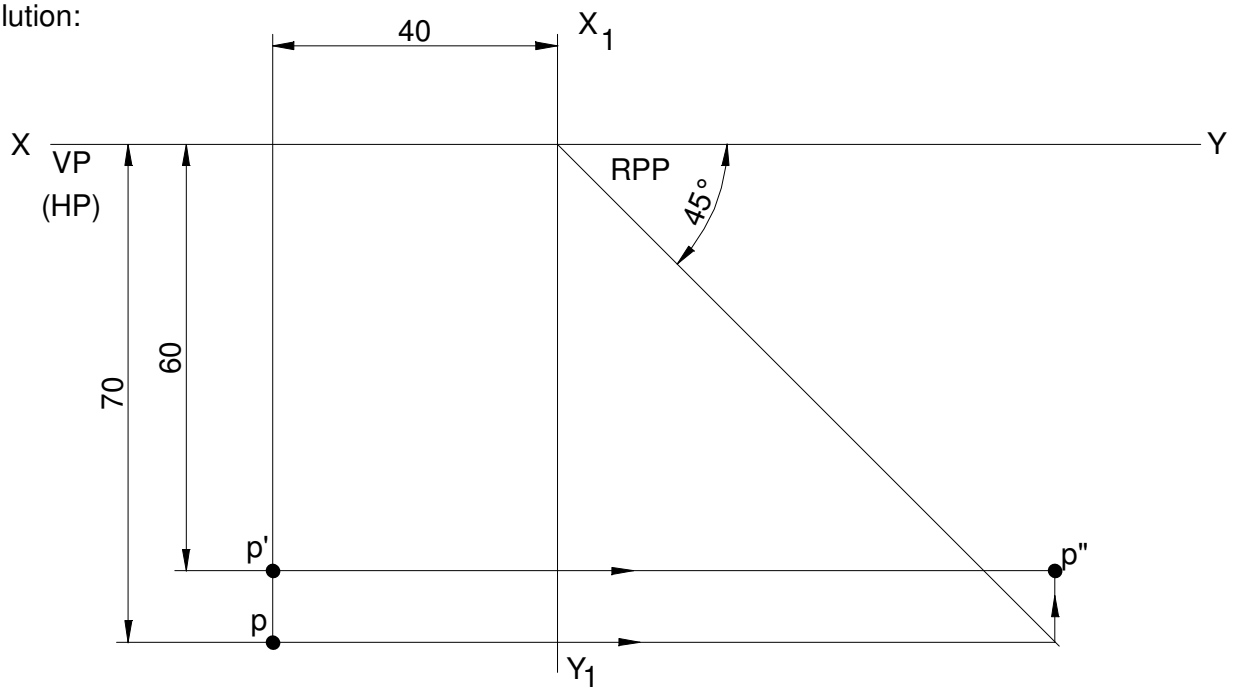
7. (47) A point is 35 mm below HP, 15 mm behind VP and 25 mm behind / infront / from RPP. Draw its projections and name the side view.

Solution:



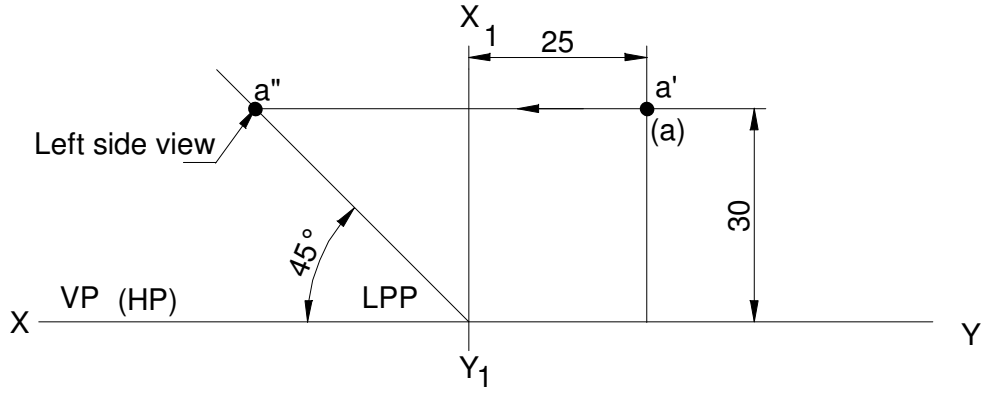
8.(6,17), Draw all the three views of a point P lying 60mm below HP,70 mm infront of VP and 40mm from RPP. Also state the quadrant in which it lies.

Solution:



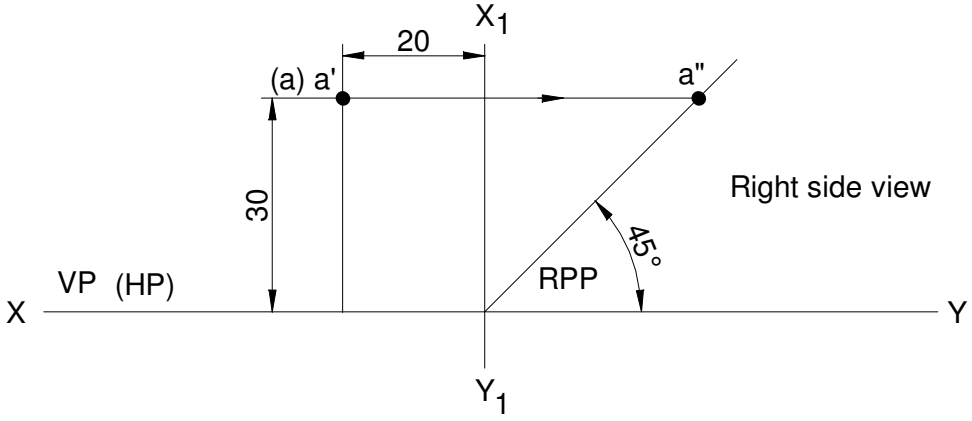
9. (20) A point is 30 mm behind VP, 30 mm above HP and 25 mm infront / behind / from LPP. Draw its projections and name the side view.

Solution:



10. (44) A point is 30 mm behind VP, 30 mm above HP and 20 mm infront / behind / from RPP. Draw its projections and name the side view.

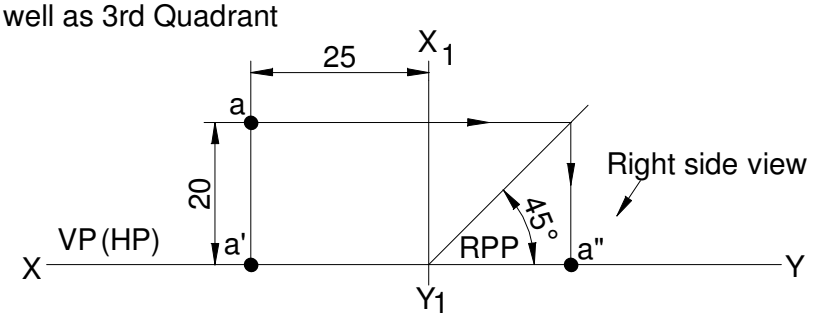
Solution:



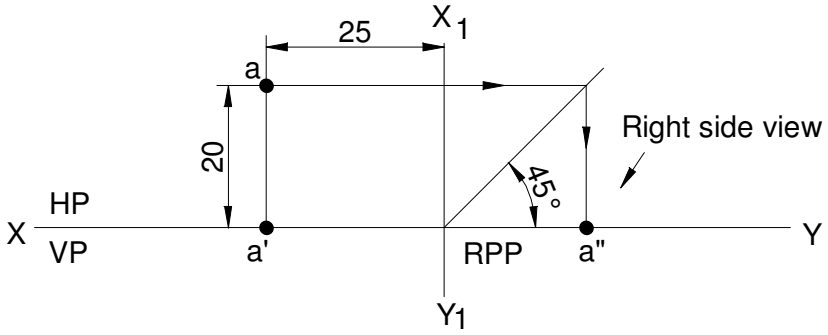
11. (21) A point is lying on HP, 20 mm behind VP and 25 mm behind / infront / from RPP. Draw its projections and name the side view.

Solution: Point A lies in 2nd as well as 3rd Quadrant

Point A lies in 2nd Quadrdant



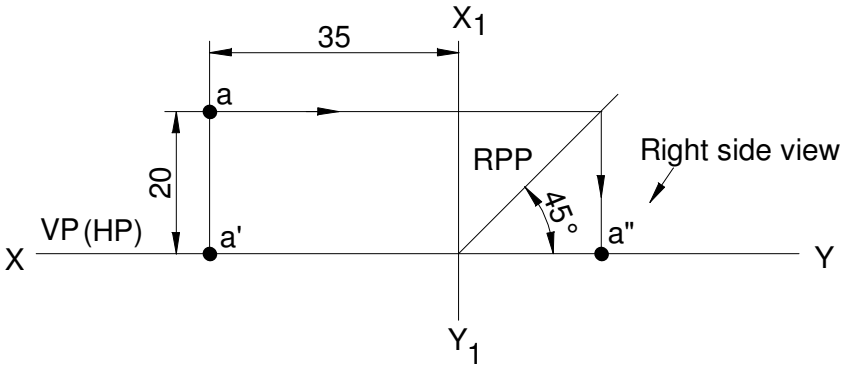
Point A lies in 3rd Quadrant



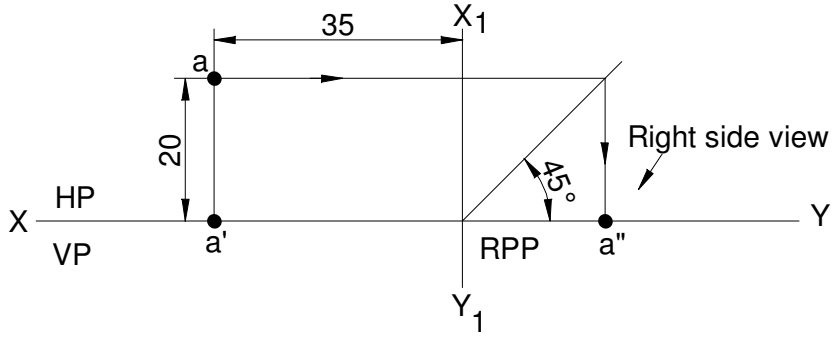
12. (46) A point is lying on HP, 20 mm behind VP and 35 mm behind / infront / from RPP. Draw its projections and name the side view.

Solution: Point A lies in 2nd as well as 3rd Quadrant

Point A lies in 2nd Quadrdant



Point A lies in 3rd Quadrant

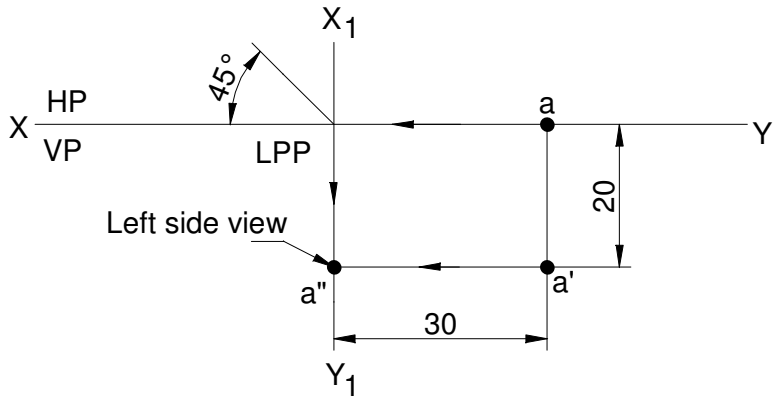


Note: Both the quadrant is shown only for reference. In the examination show only one quadrant

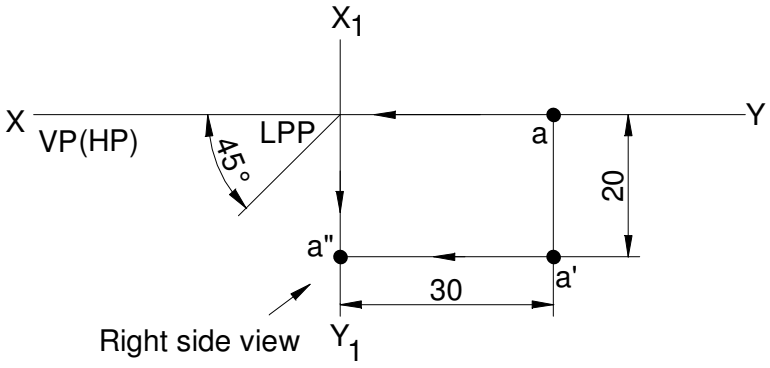
13. (23) A point is lying on VP, 20 mm below HP and 30 mm behind / infront / from LPP. Draw its projections and name the side view.

Solution:

Point A lies in 3rd Quadrant



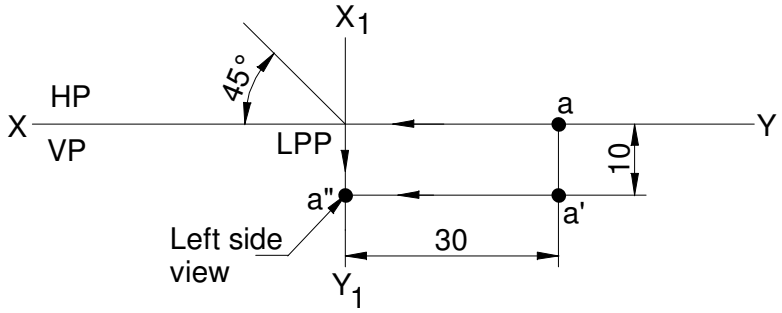
Point A lies in 4th Quadrant



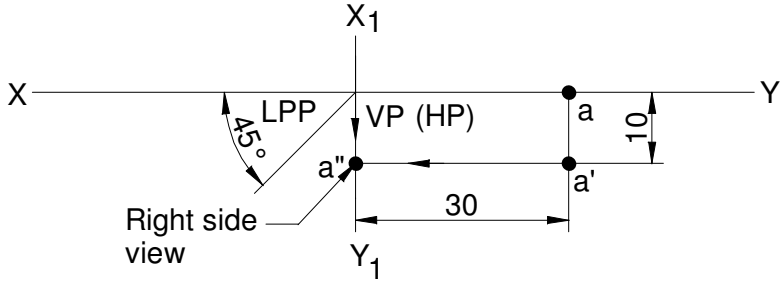
14. (45) A point is lying on VP, 10 mm below HP and 30 mm behind / infront / from LPP. Draw its projections and name the side view.

Solution:

Point A lies in 3rd Quadrant



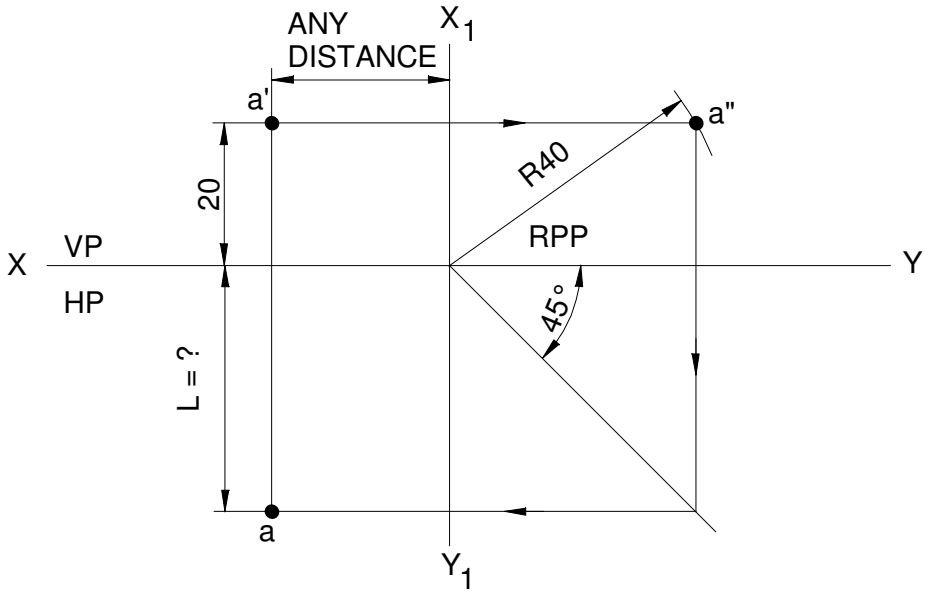
Point A lies in 4th Quadrant



Note: Both the quadrant is shown only for reference. In the examination show only one quadrant

15. (34) Point A is 20 mm above HP and in the 1st quadrant. Its shortest distances from the XY line is 40 mm. Draw the projections determine its distance from VP.

Solution:

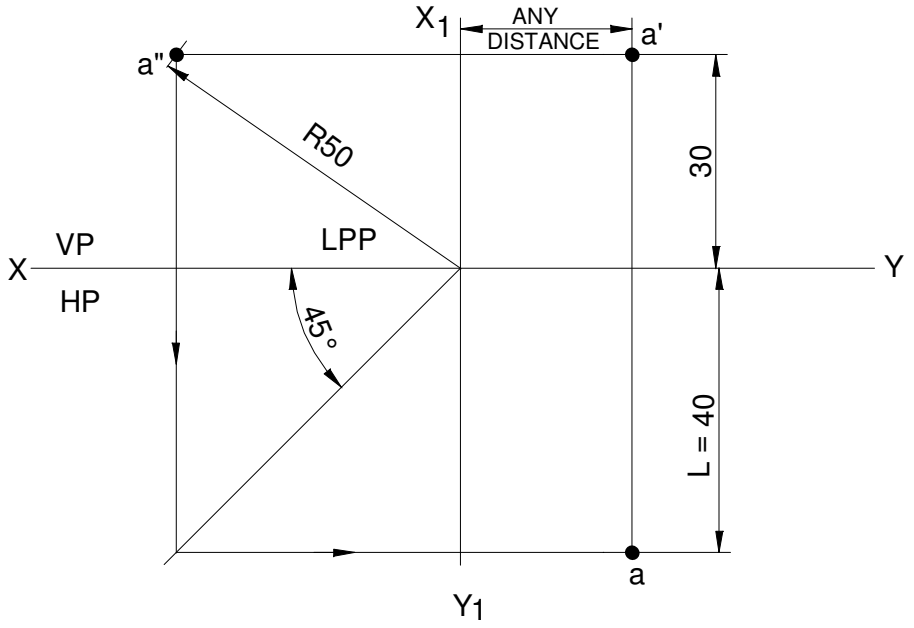


ANSWERS

L = 34.64 mm
Point A is 34.64 mm infront of VP.

16. (39) Draw the projections of a point A lying 30 mm above HP and in first quadrant. If its shortest distance from the line of intersection of HP and VP is 50 mm. Also find the distance of the point from VP.

Solution:

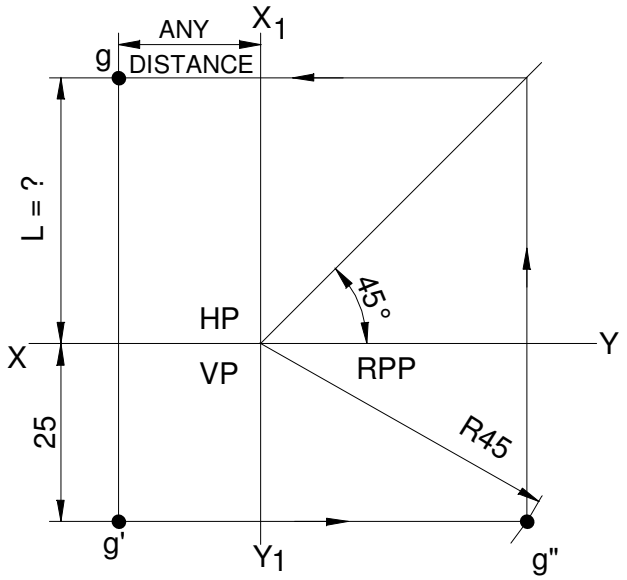


ANSWERS

L = 40.00 mm
The point A is 40.00 mm infront of VP.

17. (9) A point G is 25 mm below HP and is situtated in the third quadrant. Its shortest distance from the intersection of XY and X1Y1 is 45 mm. Drawits projection and find its distance from VP.

Solution:



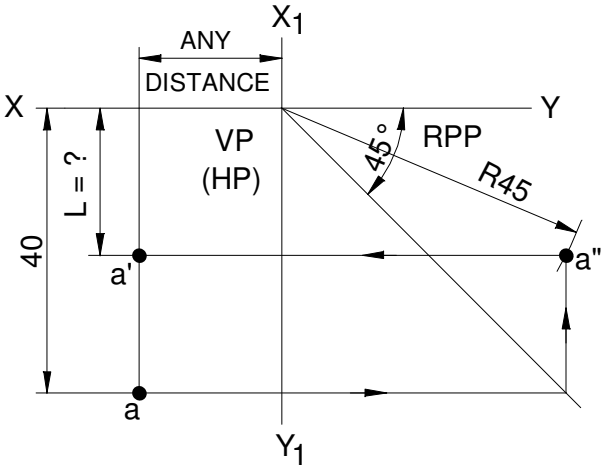
ANSWERS

L = 37.42 mm

Point G is 37.42 mm behind VP

18. (33) A point A is 40 mm infront of VP and is situated in the fourth quadrant. Its shortest distance from the intersection of XY and X1Y1, is 45 mm. Draw its projections. Also find distance from VP.

Solution:



ANSWERS

L = 20.62 mm

Point A = 20.62 mm below HP

19. (3), (27). Draw and state the quadrants in which the following points are located. Assume any distances.

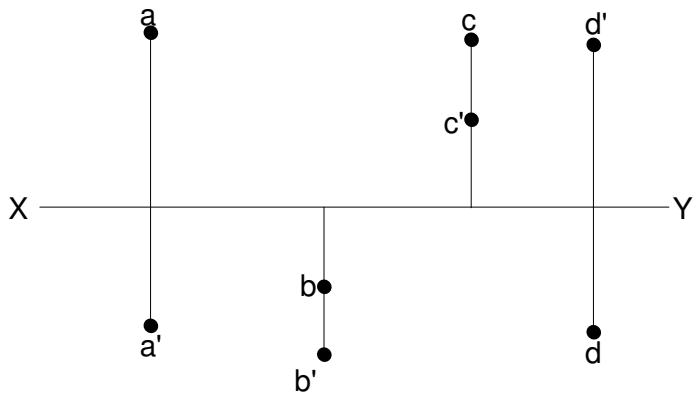
A - front view below XY line and Top view above XY line

B - Front and Top views below XY line.

C - Front and Top views are above XY line.

D - Front view above XY line and Top view below XY line.

Solution:



A lies in 3rd Quadrant
B lies in 4th Quadrant
C lies in 2nd Quadrant
D lies in 1st Quadrant

20. (2), (50). Draw the projections of the following points on the same XY line, keeping convenient distance between each projectors. Name the quarants in which they lie.

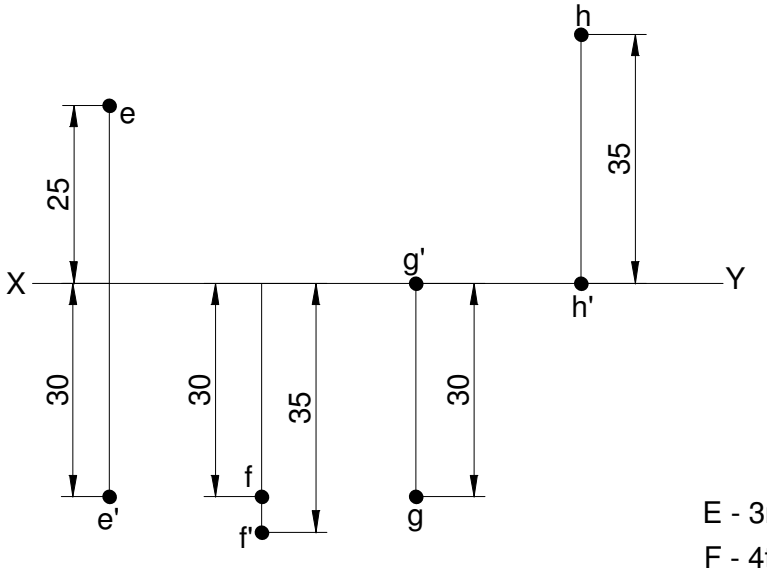
E - 30 mm below HP and 25 mm behind VP.

F - 35 mm below HP and 30 mm infront of VP.

G - on HP and 30 mm infront of VP.

H - on HP and 35 mm behind VP.

Solution:



E - 3rd Quadrant
F - 4th Quadrant
G - 1st as well as 4th Quadrant
H - 2nd as well as 3rd Quadrant

21. (26). Draw the projections of the following points on the same XY line, keeping convenient distance between each projectors. Name the quadrant in which they lie.

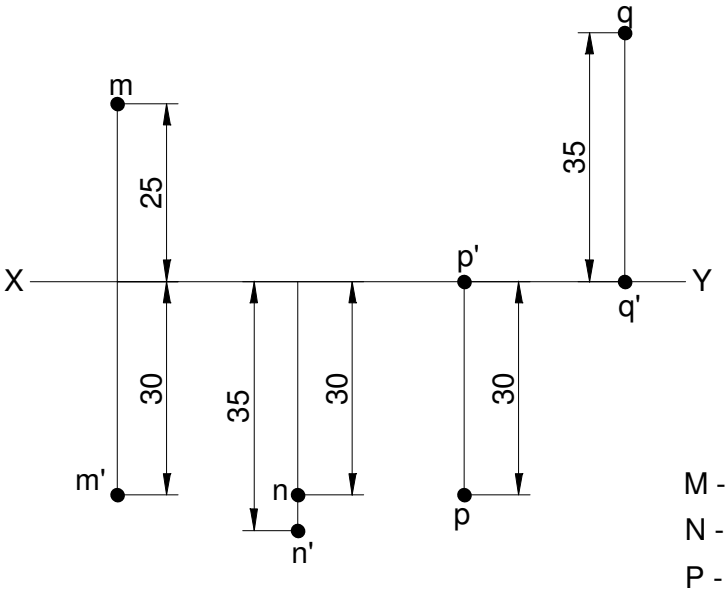
M - 30 mm below HP and 25 mm behind VP.

N - 35 mm below HP and 30 mm infront of VP.

P - on HP and 30 mm infront of VP.

Q - on HP and 35 mm behind VP.

Solution:



M - 3rd Quadrant

N - 4th Quadrant

P - 1st as well as 4th Quadrant

Q - 2nd as well as 3rd Quadrant

22. (1). Draw the projections of the following points on the same XY line, keeping convenient distance between each projectors. Name the quadrants in which they lie.

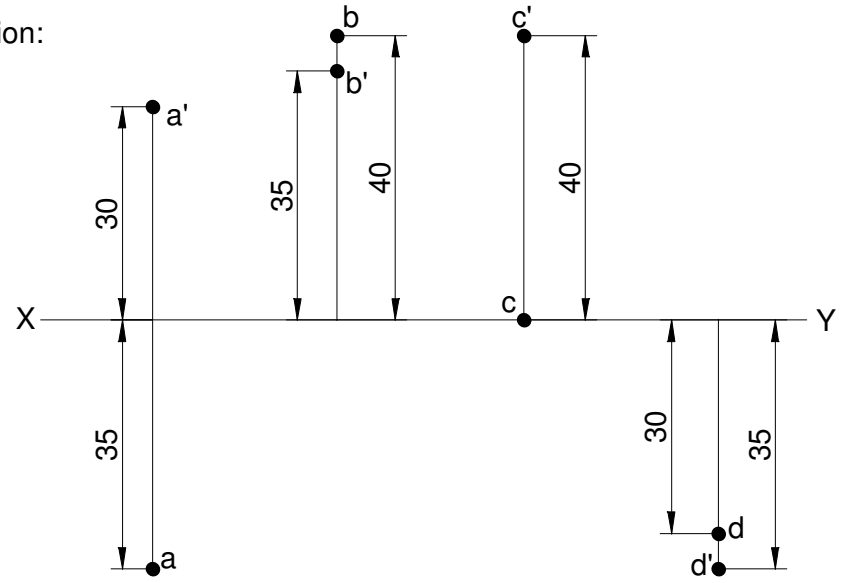
A - 30 mm above HP and 35 mm infront of VP.

B - 35 mm above HP and 40 mm behind VP.

C - 40 mm above HP and on VP.

D - 35 mm below HP and 30 mm infront of VP.

Solution:



A - 1st Quadrant

B - 2nd Quadrant

C - 1st as well as 2nd Quadrant

D - 4th Quadrant

23. (25) Draw the projections of the following points on the same XY line, keeping convenient distance between each projectors. Name the quadrants in which they lie.

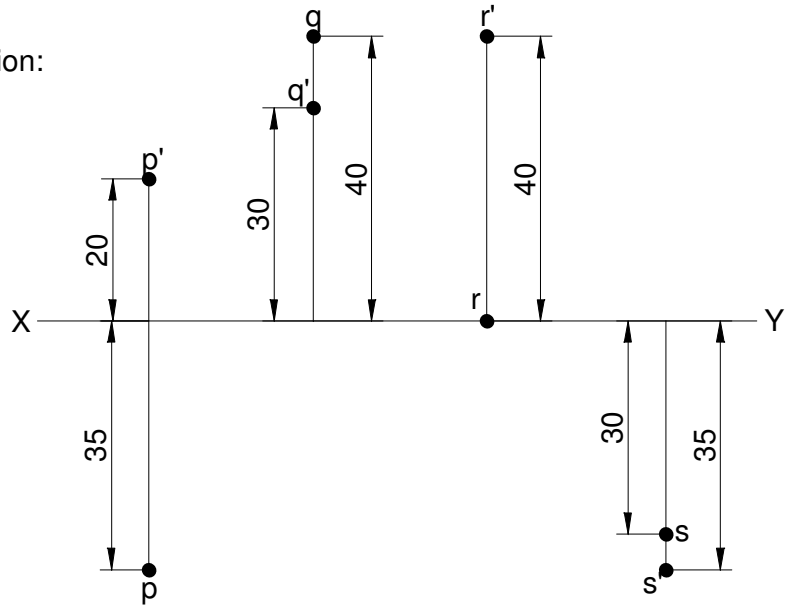
P - 20 mm above HP and 35 mm infront of VP.

Q - 30 mm above HP and 40 mm behind VP.

R - 40 mm above HP and on VP.

S - 35 mm below HP and 30 mm infront of VP.

Solution:



P - 1st Quadrant
Q - 2nd Quadrant
R - 1st as well as 2nd Quadrant
S - 4th Quadrant

24. (49) Draw the projections of the following points on the same XY line,
keeping convenient distance between each projectors. Also state the quadrants in which they lie.

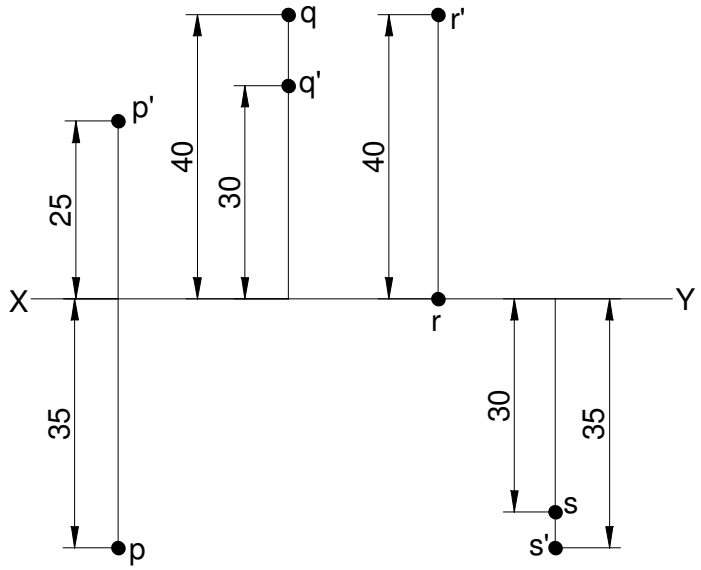
P - 25 mm above HP and 35 mm infront of VP.

Q - 30 mm above HP and 40 mm behind VP.

R - 40 mm above HP and on VP.

S - 35 mm below HP and 30 mm infront of VP.

Solution:



P - 1st Quadrant
Q - 2nd Quadrant
R - 1st as well as 2nd Quad.
S - 4th Quadrant

25. (35) Draw the projections of the following points on the same XY line, keeping convenient distance between each projectors and state the quadrants in which they lie.

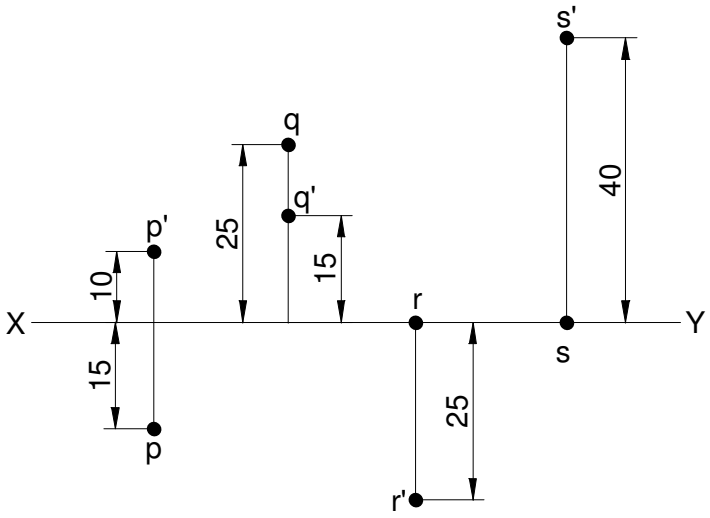
P - 10 mm above HP and 15 mm infront of VP.

Q - 15 mm above HP and 25 mm behind VP.

R - 25 mm below HP and in VP.

S - 40 mm above HP and in VP.

Solution:



P - 1st Quadrant

Q - 2nd Quadrant

R - 3rd as well as 4th Quadrant

S - 1st as well as 2nd Quadrant

26. (40) Draw the projections of the following points on the same reference XY line and state the quadrants in which they lie.

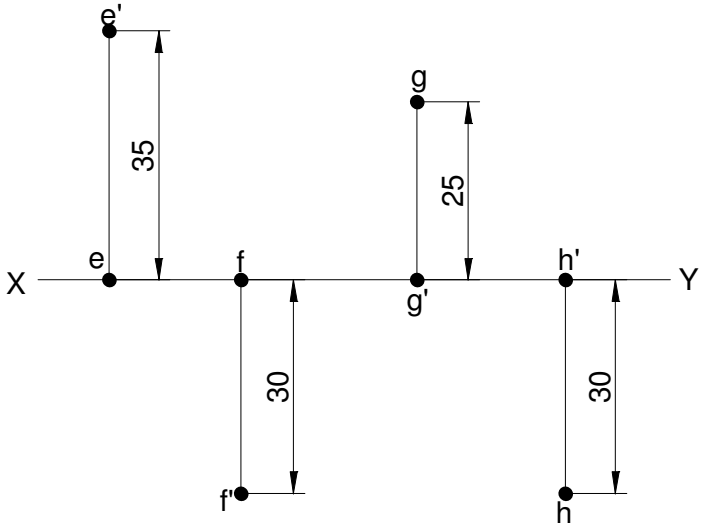
E - 35 mm above HP and on VP.

F - 30 mm below HP and on VP.

G - on HP and 25 mm behind VP.

H - on HP and 30 mm infront of VP.

Solution:



E - 1st as well as 2nd Quadrant

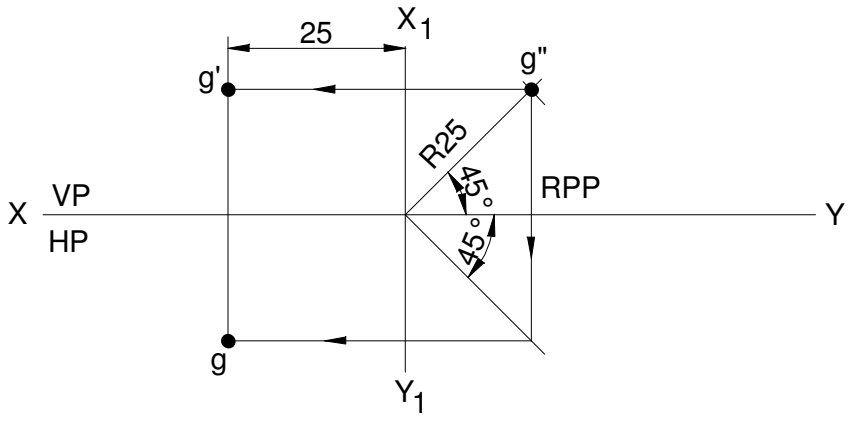
F - 3rd as well as 4th Quadrant

G - 2nd as well as 3rd Quadrant

H - 1st as well as 4th Quadrant

27. (11) Draw the projections of point G which is in 1st Quadrant such that it is equidistant from HP and VP. The point is 25 mm from RPP. Determine its distance from HP and VP.

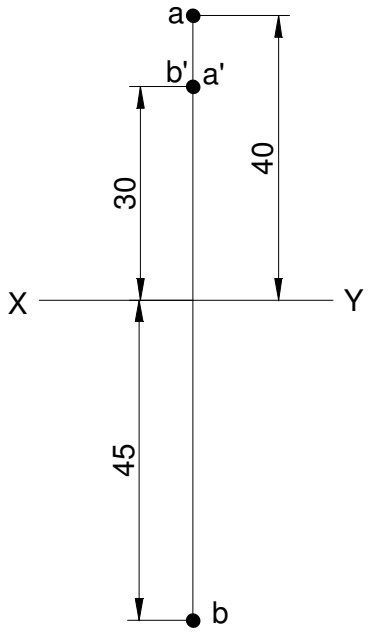
Solution:



Point G is 17.68 mm above HP and 17.68 mm infront of VP.

28. (4) A point 30 mm above XY line is the front view of two points A and B. The top view of A is 40 mm behind VP and the top view of B is 45 mm infront of VP. Draw the projections of the points and state the quadrants in which the points are situated.

Solution:

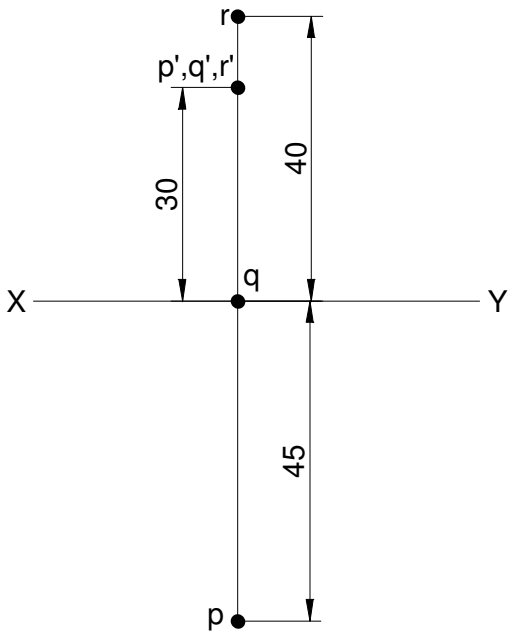


A - 2nd Quadrant

B - 1st Quadrant

29. (28) A point 30 mm above XY line is the front view of 3 points P,Q and R. The top view of R is 40 mm behind VP, the top view Q is on XY line and top view of point P is 45 mm infront of VP. Draw the projections of the points and state the quadrants in which the points are situated.

Solution:



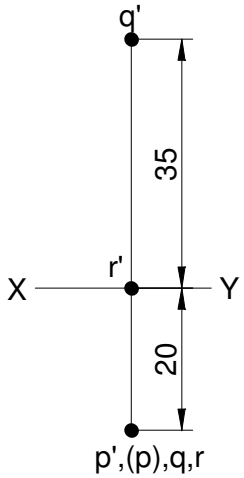
P - 1st Quadrant

Q - 1st as well as 2nd Quadrant

R - 2nd Quadrant

30. (41) A point 20 mm below the reference XY line is the top view of three points P,Q and R. P is 20 mm below HP, Q is 35 mm above HP and R is on HP. Draw the projections of the three points and state their positions and quadrants in which they are situated.

Solution:



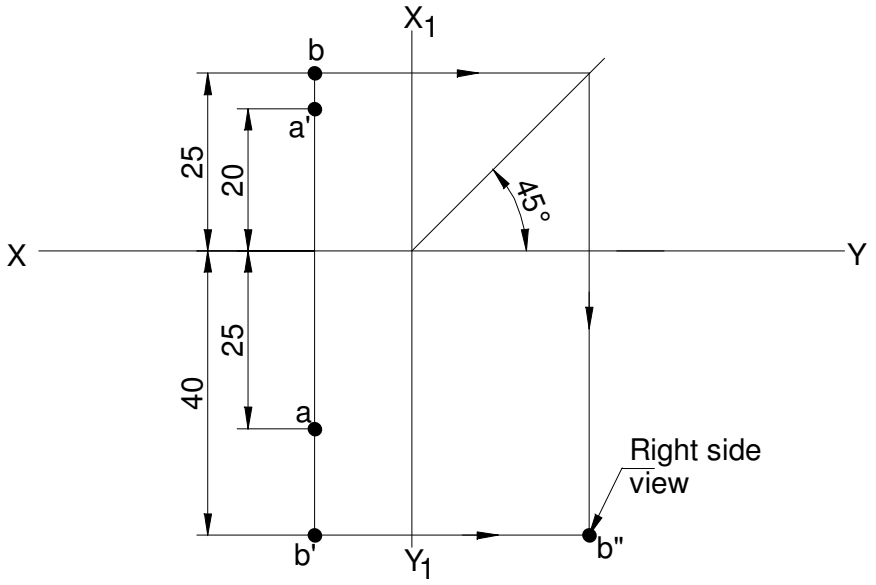
P - 20 mm below HP and 20 mm infront of VP - 4th Quadrant

Q - 35 mm above HP and 20 mm infront of VP - 1st Quadrant

R - on HP and 20 mm infront of VP - 1st as well as 4th Quadrant

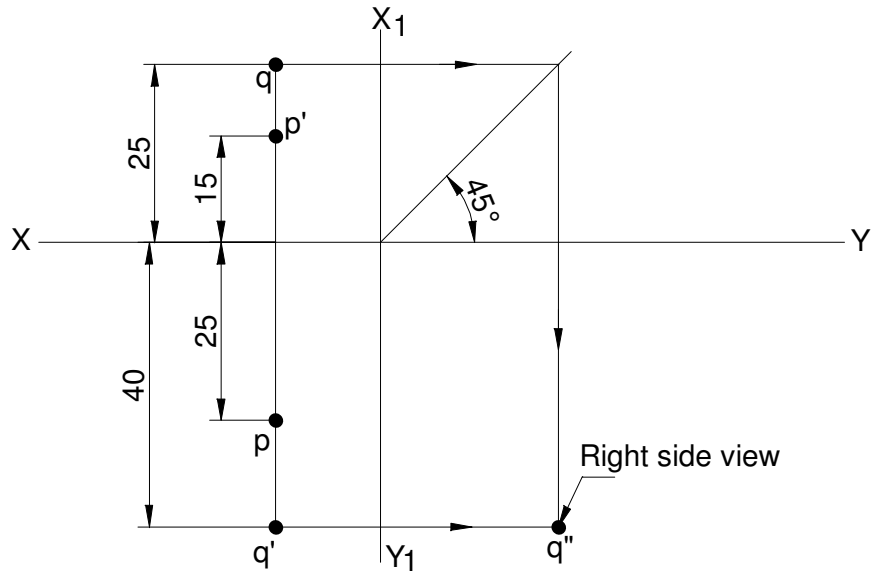
31. (24) A point A is 20 mm above HP and 25 mm infront of VP. Another point B is 25 mm behind VP and 40 mm below HP. Draw their projections when the distance between their projectors parallel to XY line is zero mm. Add the right side view only to point B.

Solution:



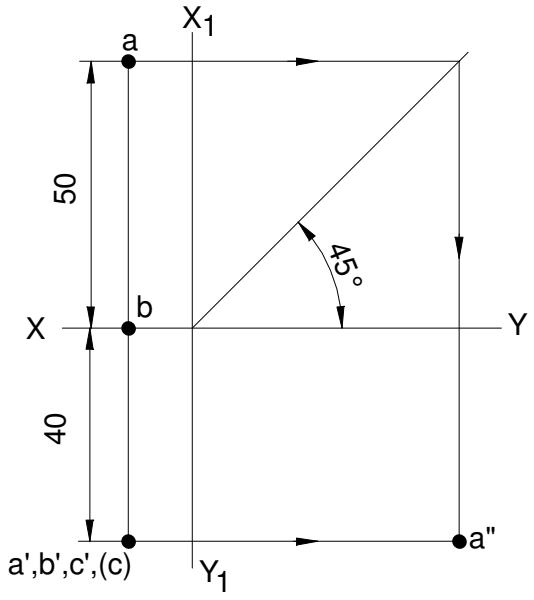
32. (48) A point P is 15 mm above HP and 25 mm infront of VP. Another point Q is 25 mm behind VP and 40 mm below HP. Draw their projections when the distance between their projectors parallel to XY line is zero mm. Add the right side view only to point Q.

Solution:



33. (30) The common point 40 mm below XY line represents not only the front views of three points A,B and C but also the top view of point C. The top view of point B is lies on XY line and top view of point A lies 50 mm above it. Draw the projections of the points and add the right side view to the point A only. Also state in which the quadrants the points lie.

Solution:



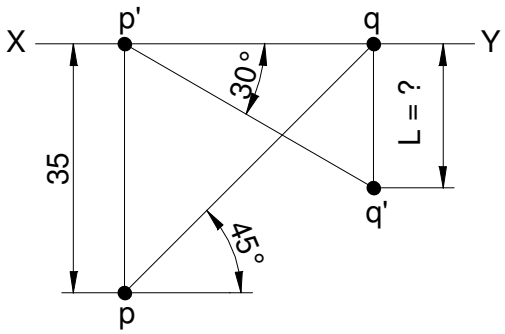
A - 3rd Quadrant

B - 3rd as well as 4th Quadrant

C - 4th Quadrant

34. (7), (31) A point P is on HP and 35 mm infront of VP. Another point Q is on VP and below HP. The line joining their front views makes an angle of 30 deg. to XY line, while the line joining their top views makes an angle of 45 deg. with XY line. Find the distance of the point Q from HP.

Solution:



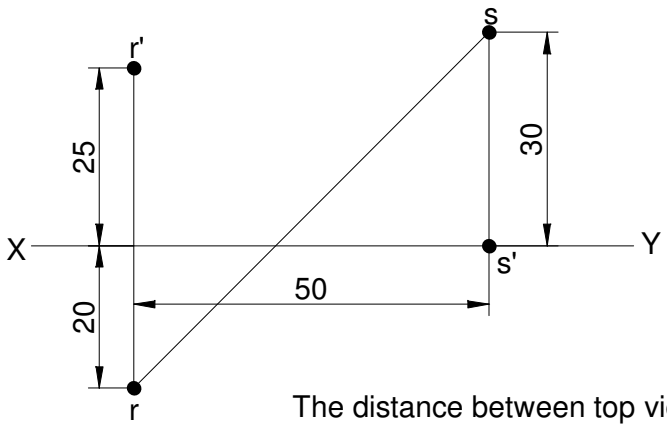
ANSWERS

L = 20.21 mm

Q is 20.21 mm below HP

35. (12),(36) A point R is 25 mm above HP and 20 mm infront of VP. Another point S is on HP and 30 mm behind VP. The distance between their projectors measured parallel to the line of intersection VP and HP is 50 mm. Find the distance between top views of points R and S.

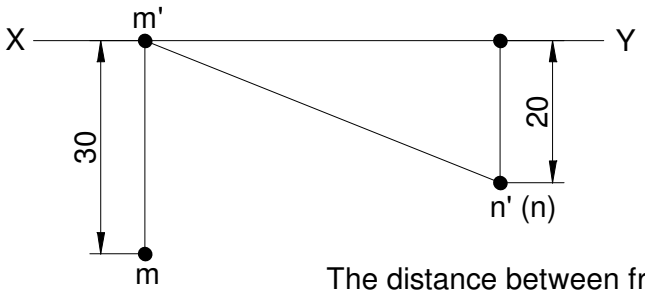
Solution:



The distance between top views of points R and S is 70.71 mm

36. (13), (37) A point M is on HP and 30 mm infront of VP. Another point N is 20 mm below HP and 20 mm infront of VP. The distance between their projectors measured parallel to XY line is 50 mm. Find the distance between front views of the point M and N.

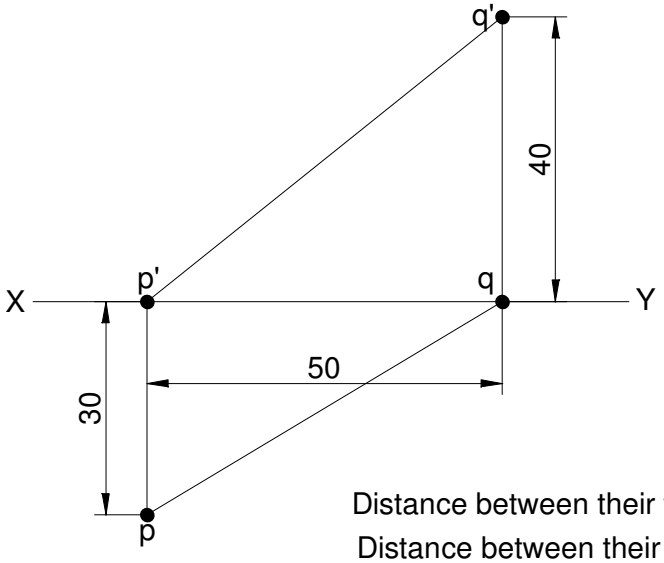
Solution:



The distance between front views of M and N are 53.85 mm

37. (14), (38) A point P is on HP and 30 mm infront of VP. Another point Q is on VP and 40 mm above HP. The distance between their projectors parallel to XY line is 50 mm. Find the distance between their front and top views of the points P and Q.

Solution:

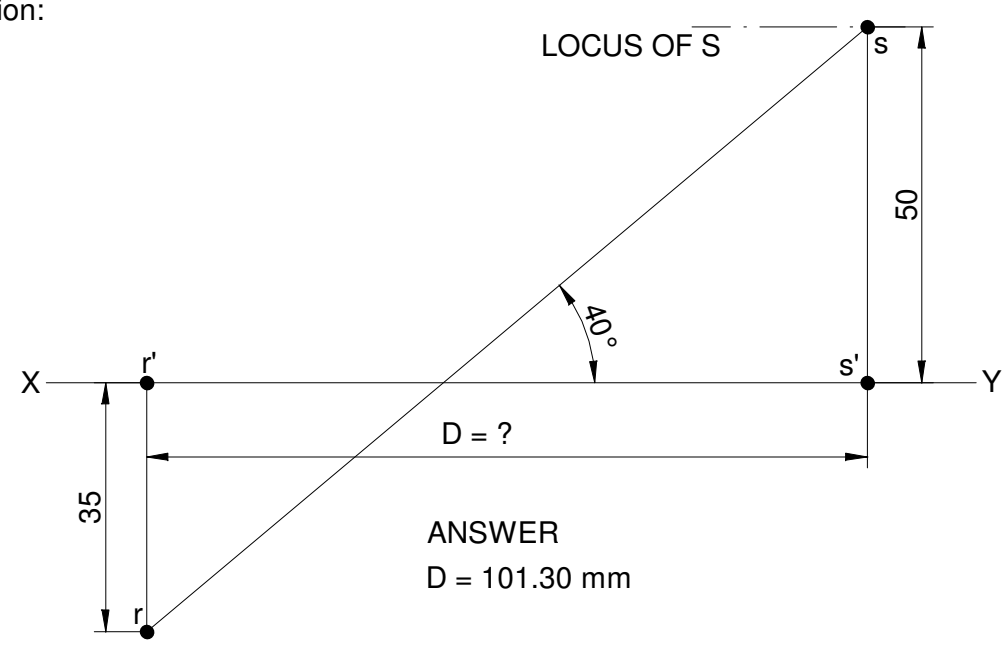


Distance between their front views of P and Q is 64.03 mm

Distance between their top views of P and Q is 58.31 mm

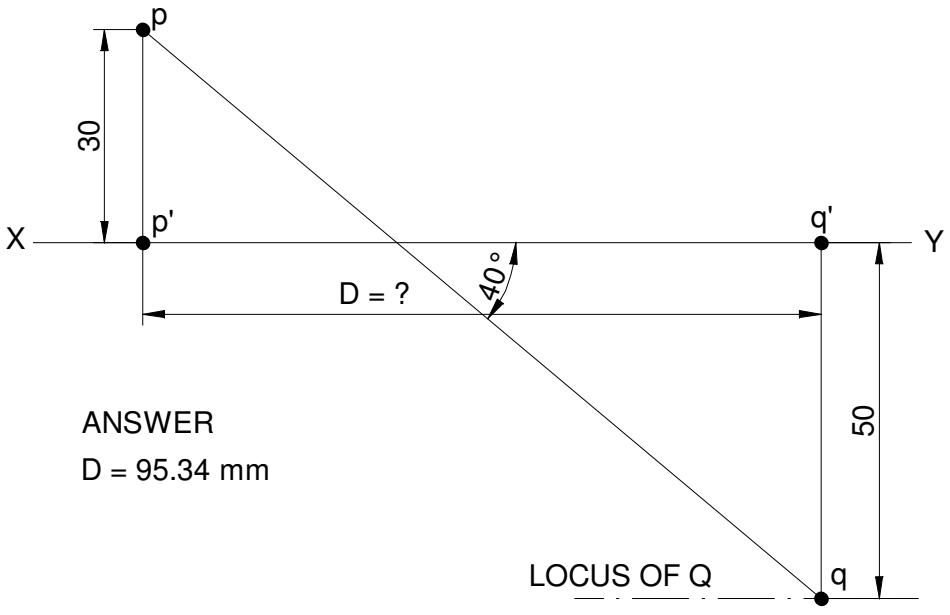
38. (8) Two points R and S are on HP. The point R is 35 mm infront of VP, while S is 50 mm behind VP. The line joining their top views makes an angle of 40 deg. with XY. Find the horizontal distance between the two projectors.

Solution:



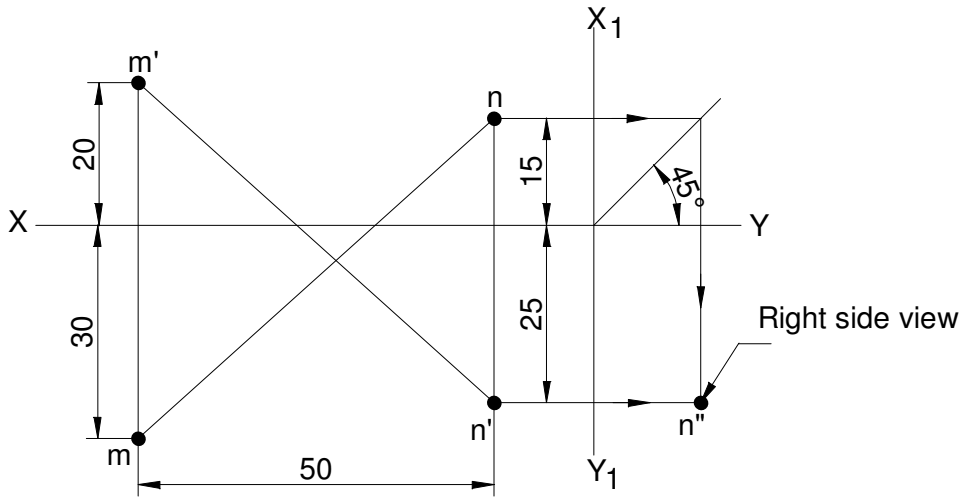
39. (32) Two points P and Q are on HP. The point P is 30 mm behind VP, while Q is 50 mm infront of VP. The line joining their top views makes an angle of 40 deg. with XY. Find the horizontal distance between their projectors parallel to XY line.

Solution:



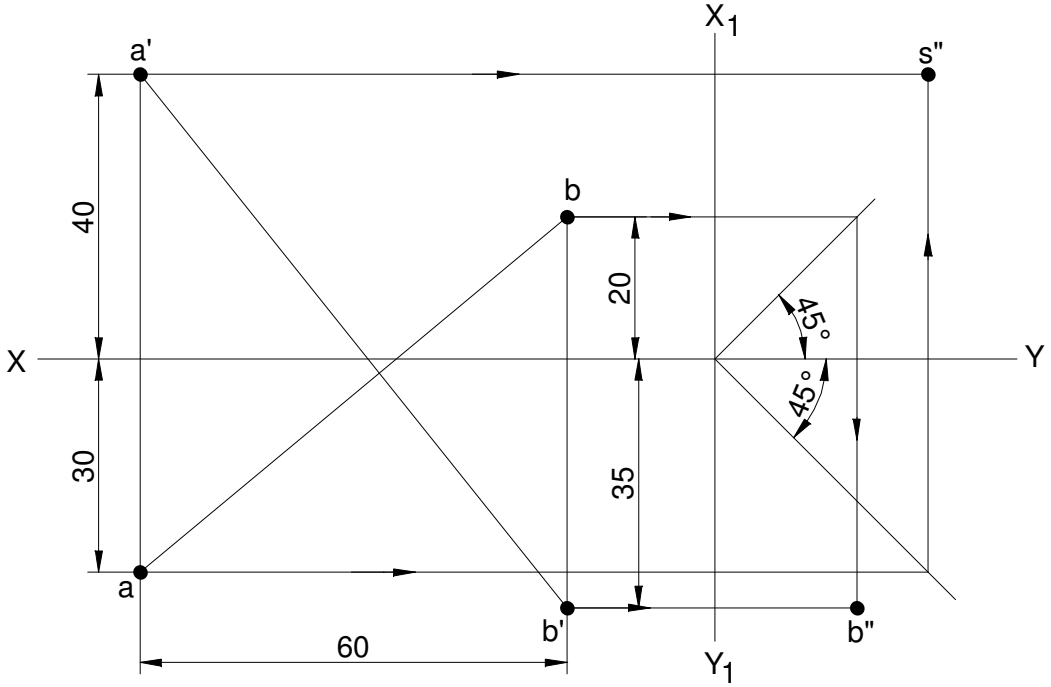
40. (29) A point M is 30 mm infront of VP and 20 mm above HP, another point N is 15 mm behind VP and 25 mm below HP. The horizontal distance between the points parallel to XY line is 50 mm. Draw the projections of the points M and N and join their front and top views. Draw the right side view for the point N only.

Solution:



41. (5) A point A is 30 mm infront of VP and 40 mm above HP. Another point B is 20 mm behind VP and 35 mm below HP. The horizontal distance between the points measured parallel to XY line is 60 mm. Draw the three projections of the points. Join their front and top views.

Solution:



42. (10) A point S is in first quadrant and equidistant of 50 mm from all the three principal planes. Draw the projections of the point. Draw all the three views of the point.

Solution: