

Question Bank UNIT-III

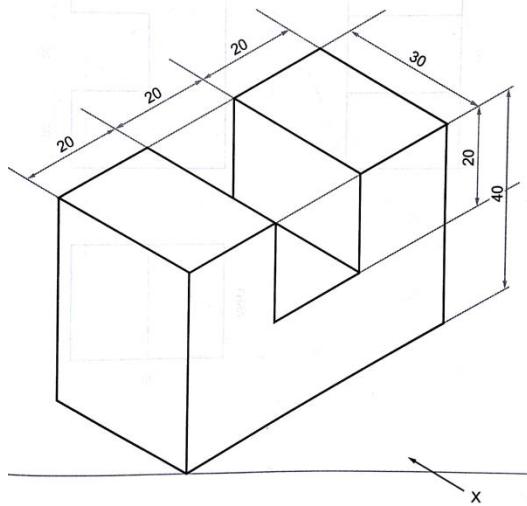
1. Construct an ellipse when the distance of the focus from the directrix is equal to 50mm and eccentricity is $2/3$.
2. The major and minor axes of an ellipse measure 100mm and 70mm respectively. Draw an ellipse by the rectangle method.
3. Construct a parabola, when the distance of the focus from the directrix 50mm.
4. Draw a parabola having base length 80mm and axis height 50mm by the rectangle method.
5. The distance of the focus from the directrix is 54mm. A point moves in such a way that the eccentricity is equal to $5/4$. Draw the locus of the point and name the curve.
6. Draw Archimedean Spiral of 90 mm radius for 1 convolution /revolution. As well as for 3/2 revolution.
7. Draw an involute of a circle 50 mm diameter.
8. Draw an involute of Pentagon of side 25 mm
9. Draw an involute of Square of side 25 mm.
10. Draw an involute of Hexagon of side 25 mm.
11. A circle of 40mm diameter rolls along a straight line without slipping. Draw the curve Cycloid traced out by a point P on the circumference, for one complete Revolution with Nearest and Farthest Point P.
12. Draw a helix of one revolution of cylinder of base diameter 60 mm and axis height (Pitch) 100 mm.
13. Draw a helix of one revolution on cone of base diameter 70 mm and axis height (Pitch) 90 mm.
14. Draw an ellipse by rectangle method if the major axis & Minor axis are 90mm & 60 mm respectively.
15. Draw an ellipse by rectangle method if the major axis & Minor axis are 120 mm & 80 mm respectively.
16. Draw an ellipse by directrix focus method if distance of focus point from directrix is 60 mm & eccentricity is $2/3$.
17. Draw an ellipse by directrix focus method if distance of focus point from directrix is 50 mm & eccentricity is $2/3$.
18. Draw a parabola by rectangle method if the base is 80 mm and axis height is 100 mm.
19. A point P is moving around the surface of the cone of base 70 mm & height 100 mm if point P starting from apex and reaches to base in one and half turn. Draw the projection of path P.
20. Draw involute of circle of diameter 50 mm .

Question Bank UNIT-IV

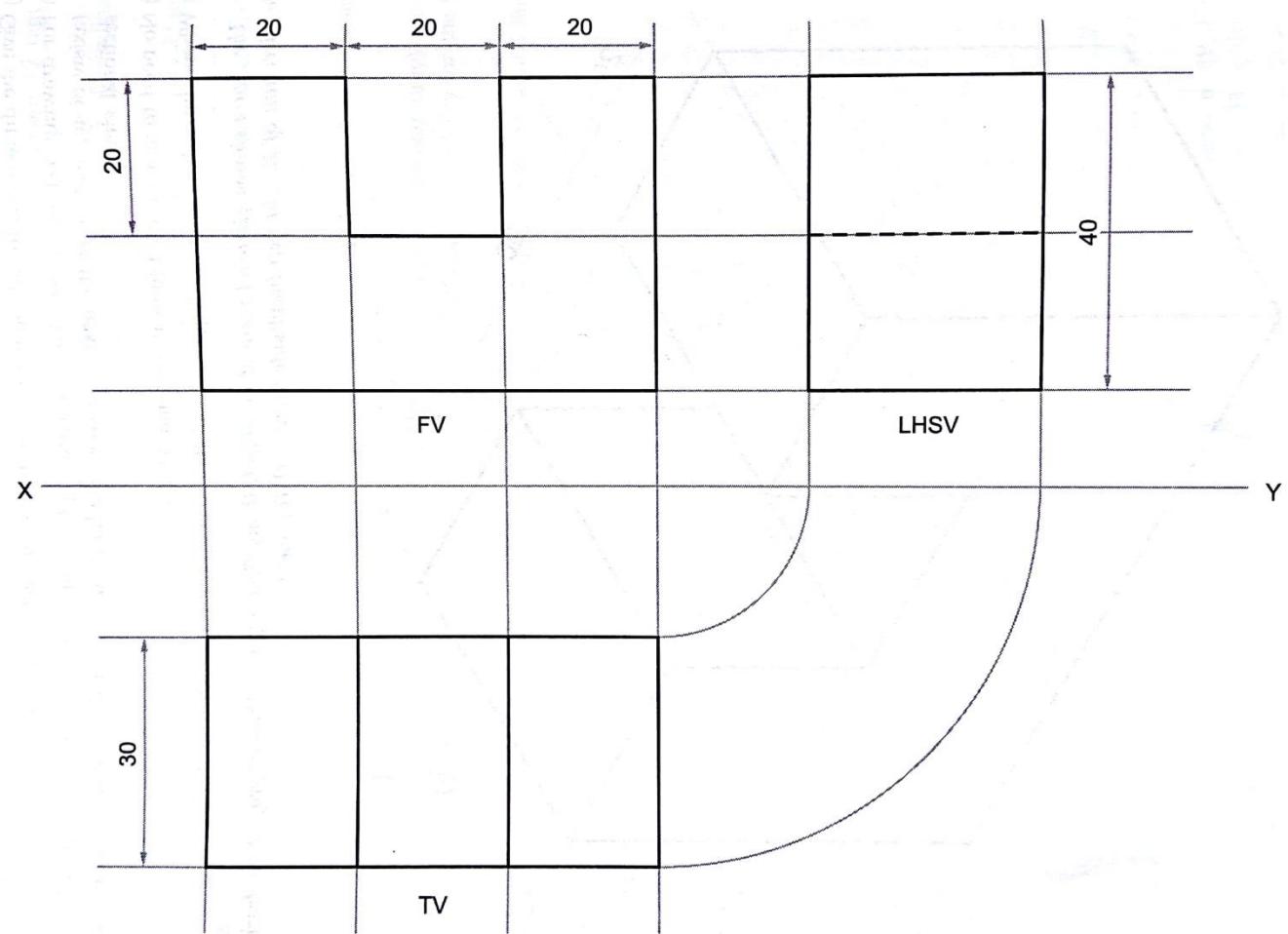
UNIT- IV : Orthographic Projection

Problem 01: Figure shows pictorial view of object using first angle method of projection draw

(i)Front View (ii) Top view & (iii) Side view of the object

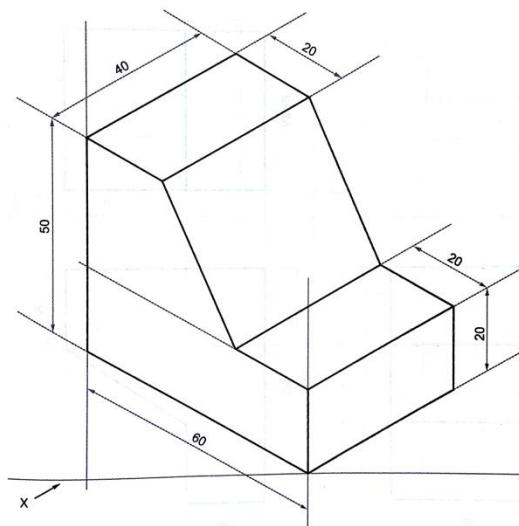


Solution:

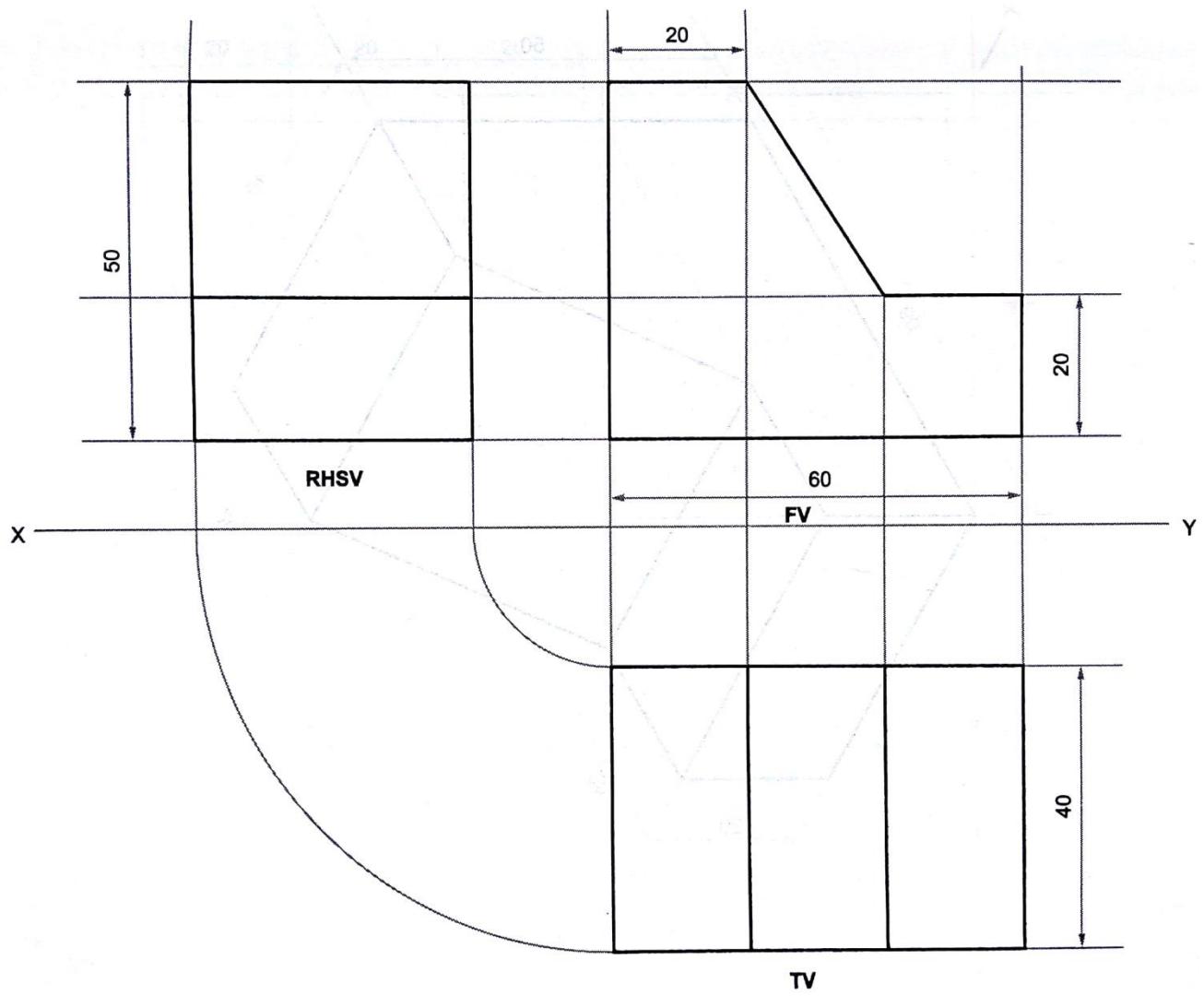


Problem 02: Figure shows pictorial view of object using first angle method of projection draw

- (i)Front View (ii) Top view & (iii) Side view of the object

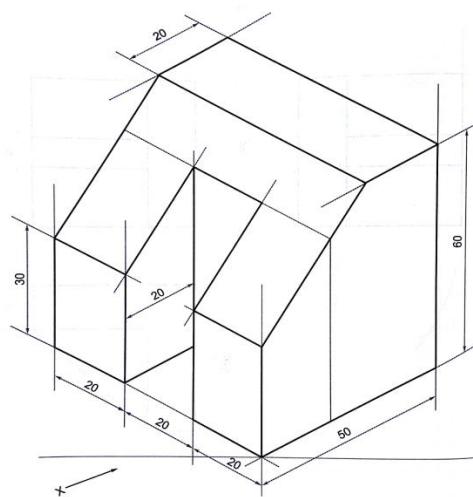


Solution:

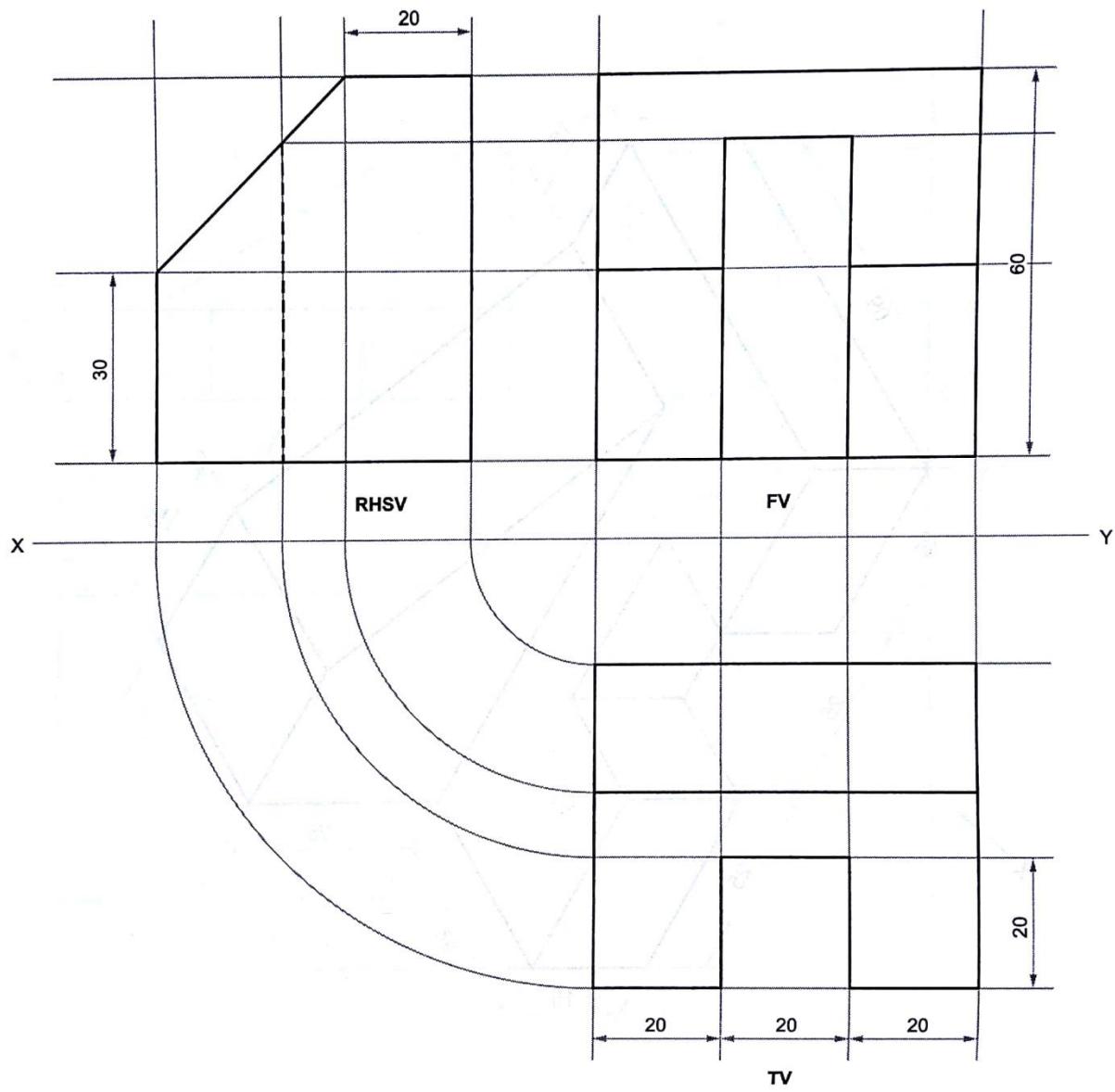


Problem 03: Figure shows pictorial view of object using first angle method of projection draw

(i) Front View (ii) Top view & (iii) Side view of the object

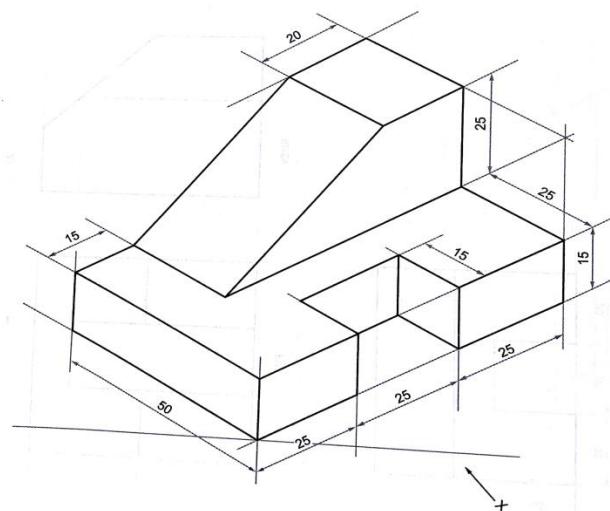


Solution:

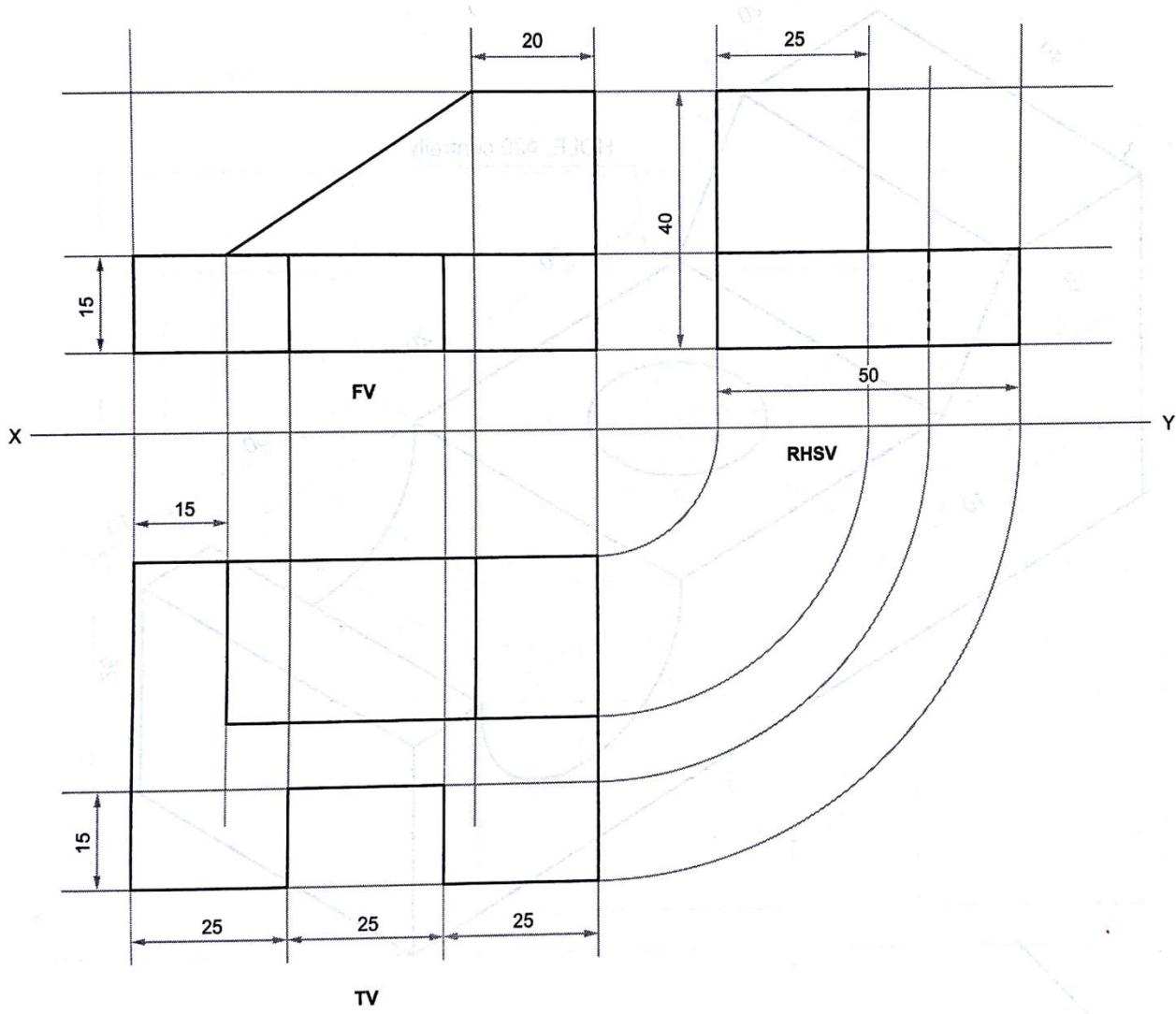


Problem 04: Figure shows pictorial view of object using first angle method of projection draw

- (i) Front View (ii) Top view & (iii) Side view of the object

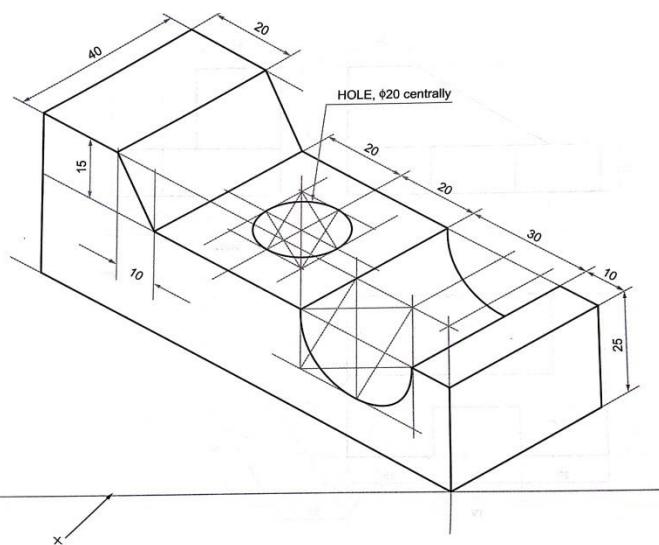


Solution:

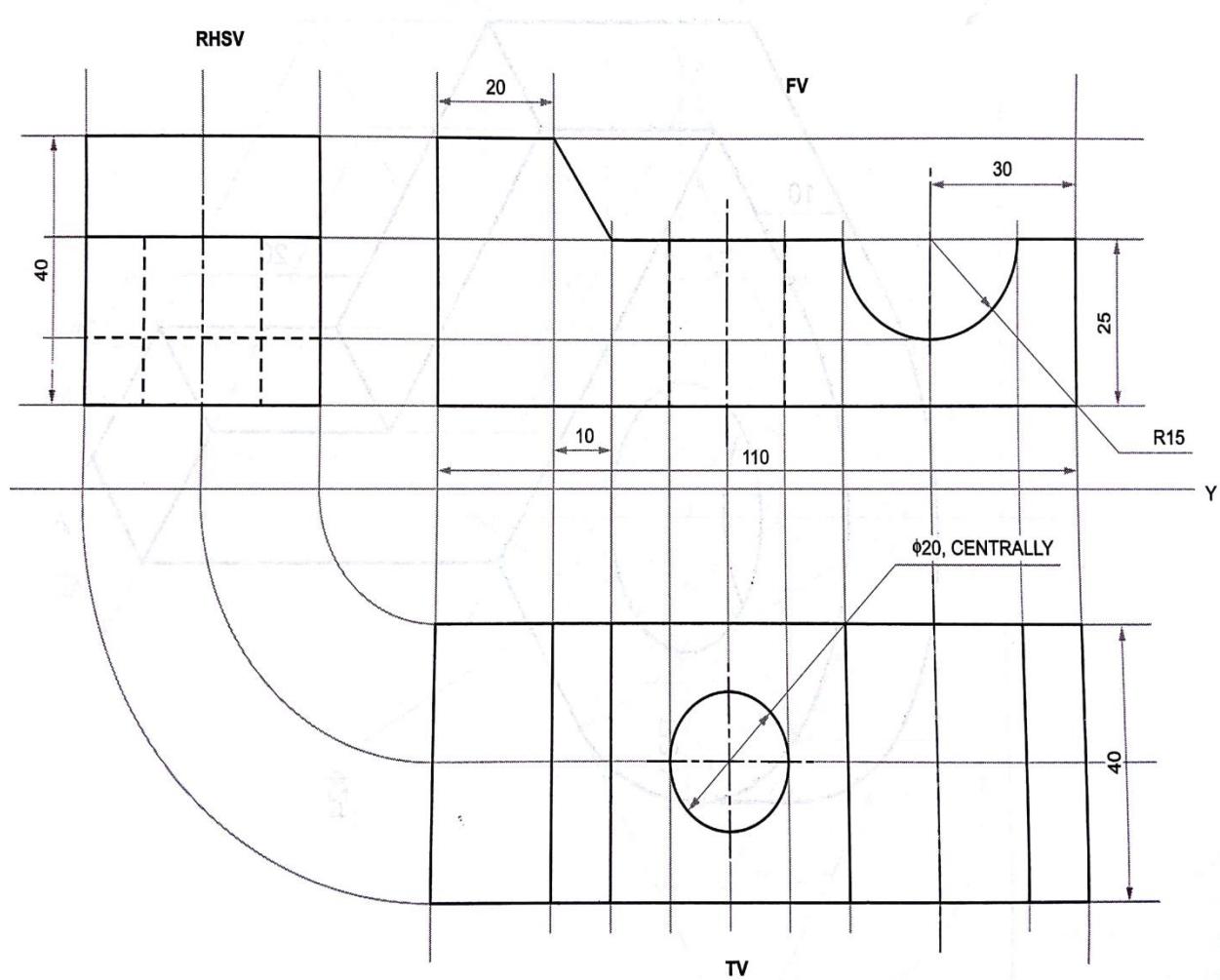


Problem 05: Figure shows pictorial view of object using first angle method of projection draw

(i)Front View (ii) Top view & (iii) Side view of the object

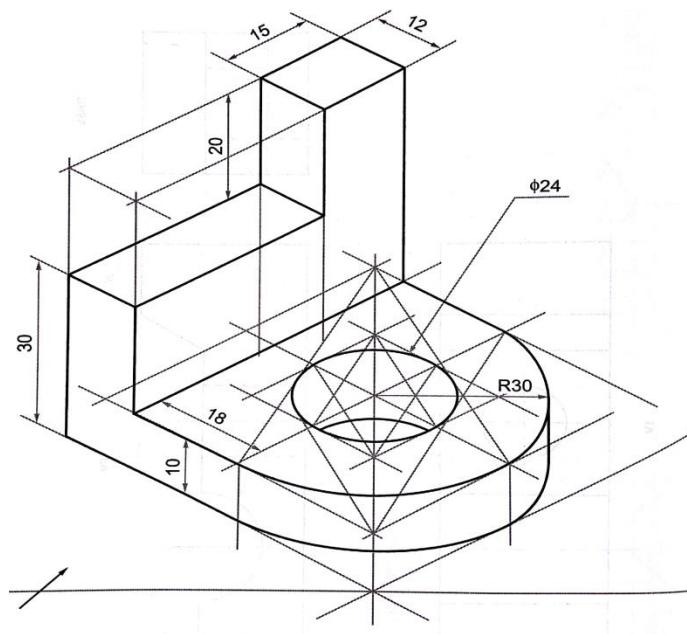


Solution:

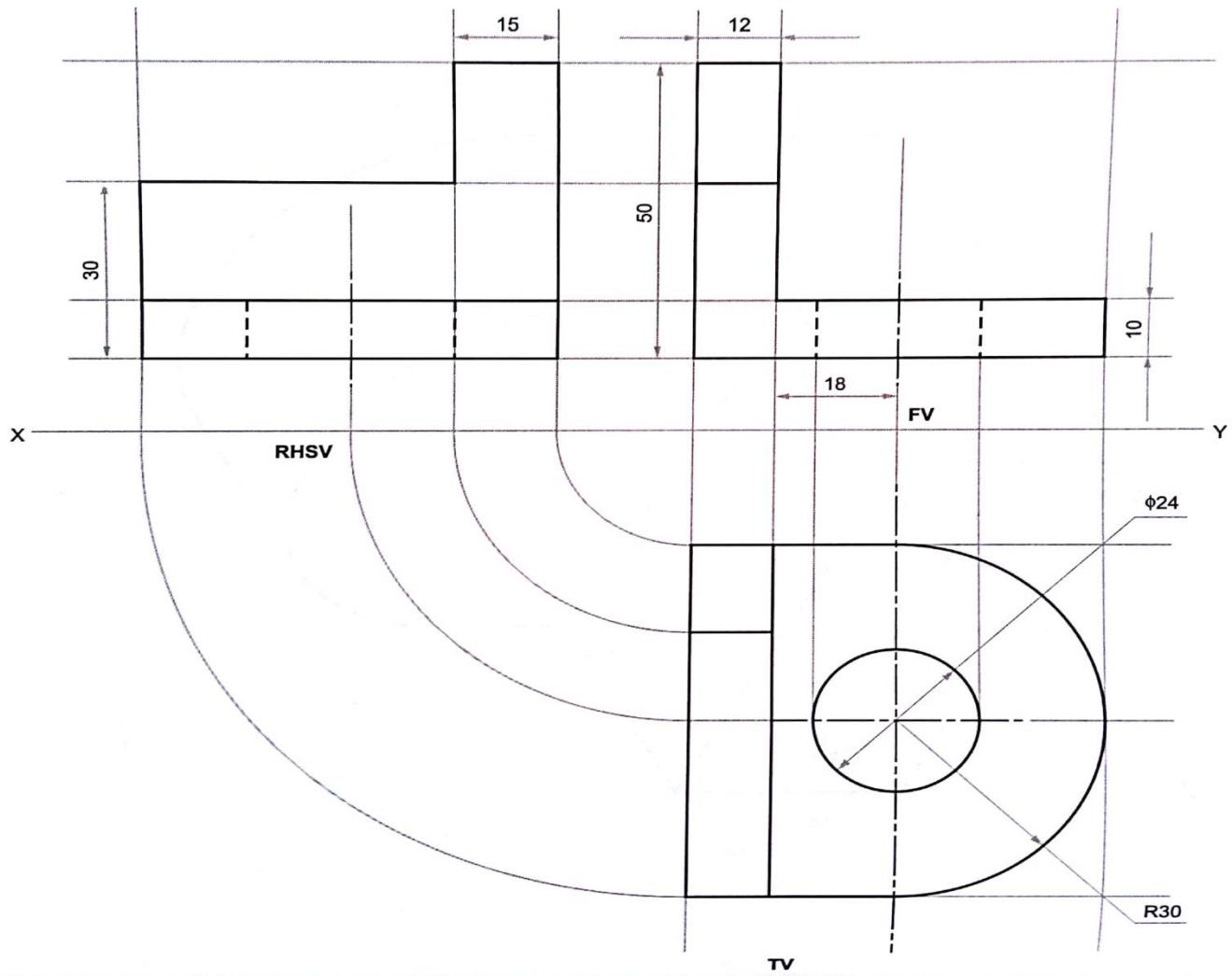


Problem 06: Figure shows pictorial view of object using first angle method of projection draw

(i)Front View (ii) Top view & (iii) Side view of the object

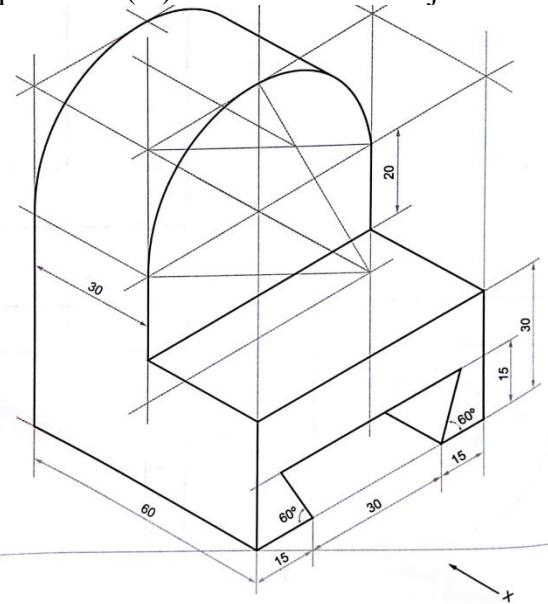


Solution:

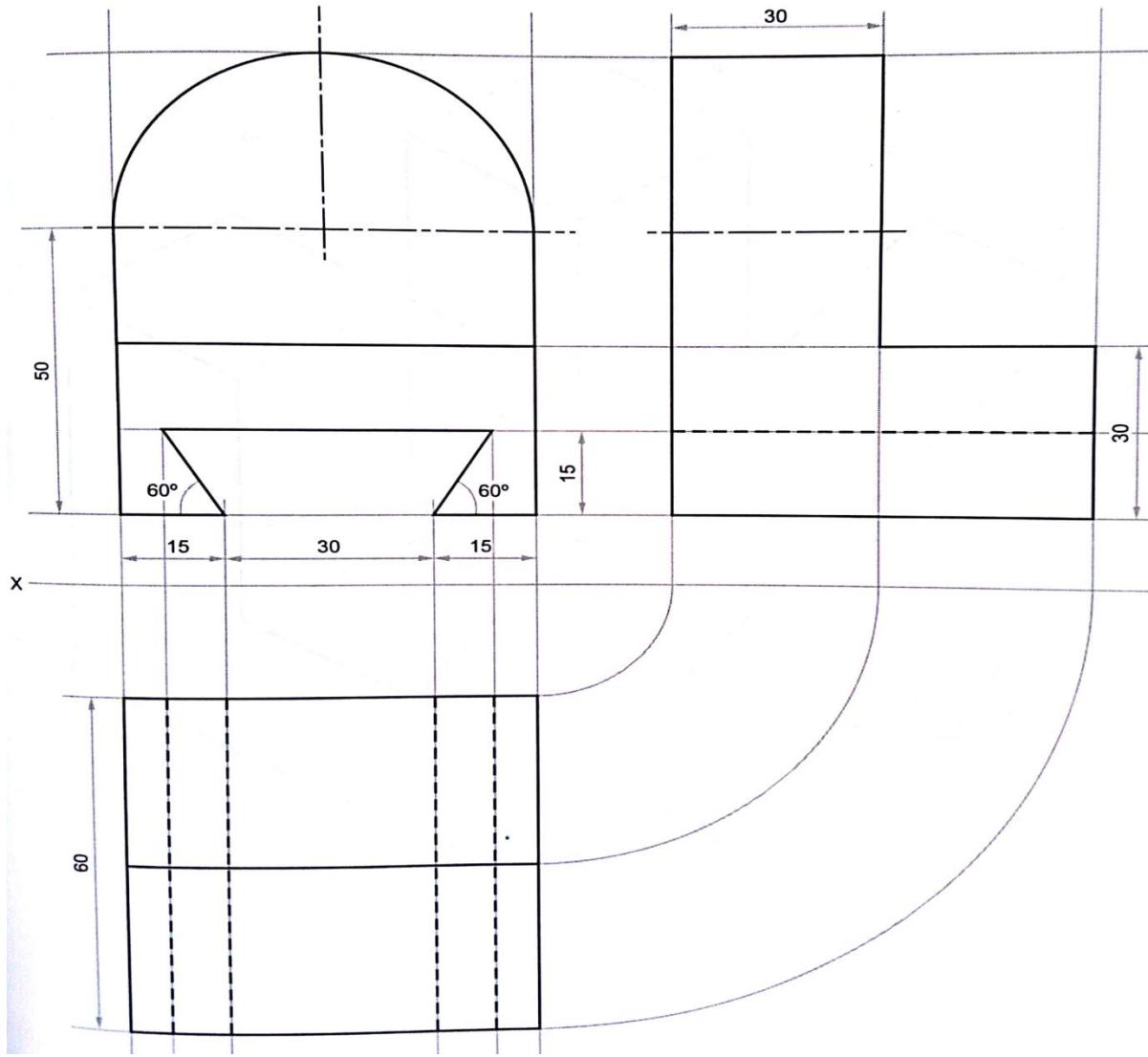


Problem 07: Figure shows pictorial view of object using first angle method of projection draw

(i)Front View (ii) Top view & (iii) Side view of the object

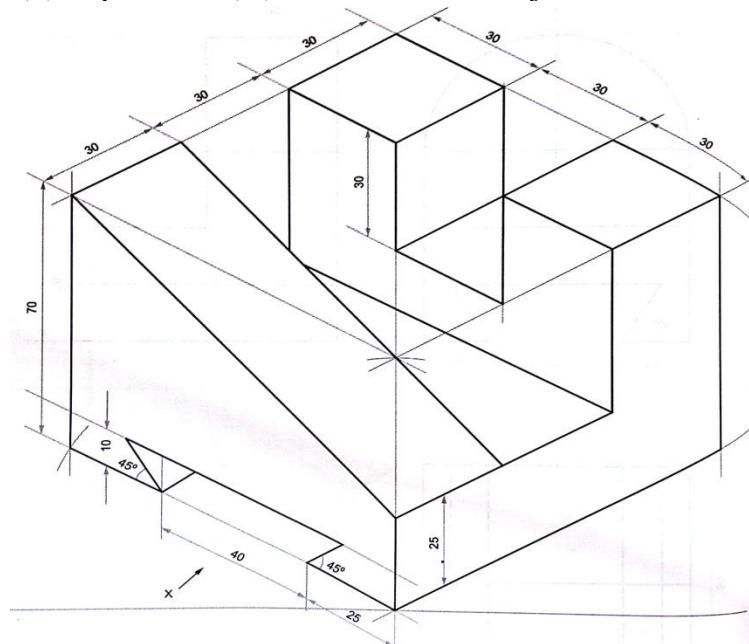


Solution:

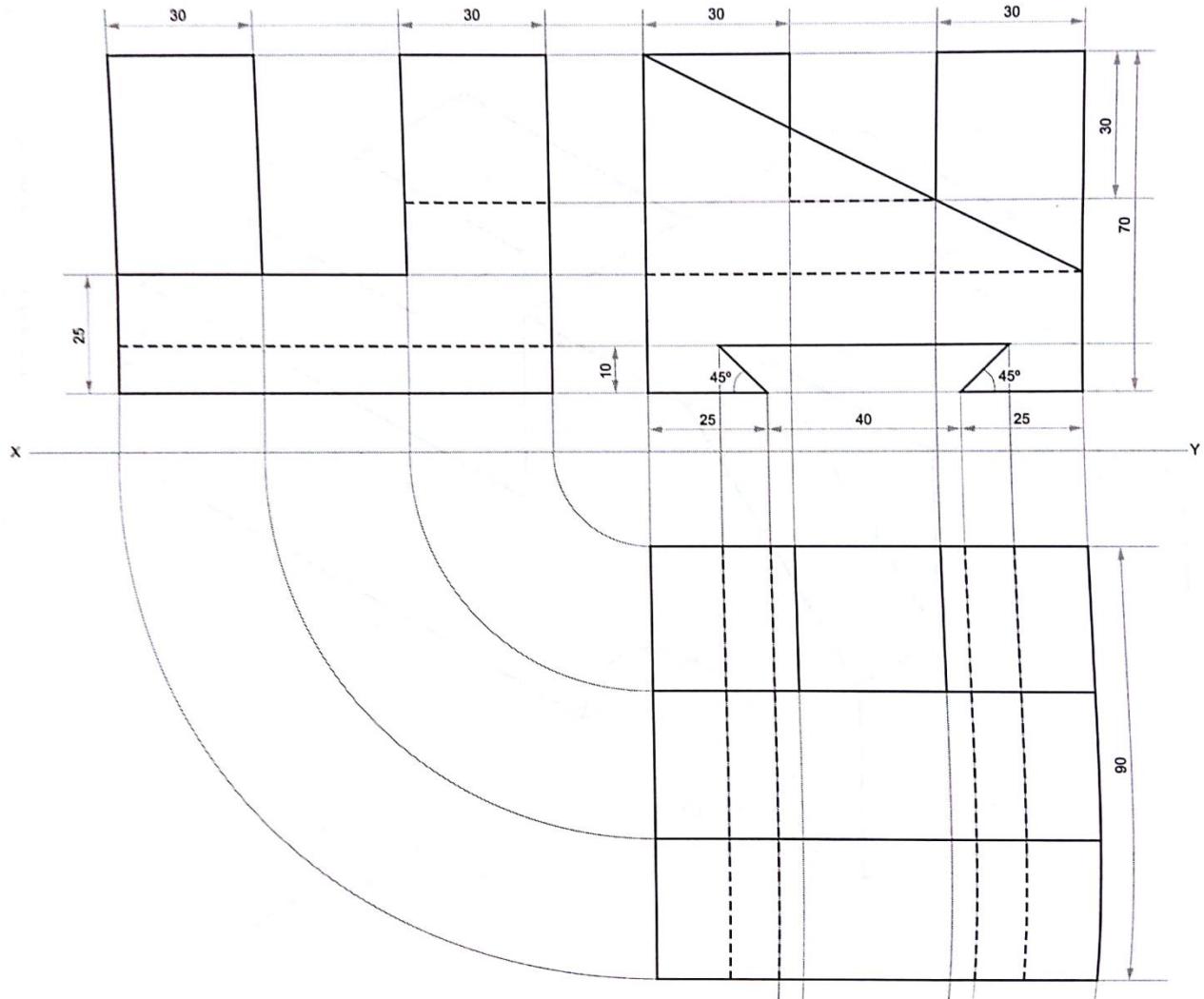


Problem 08: Figure shows pictorial view of object using first angle method of projection draw

(i)Front View (ii) Top view & (iii) Side view of the object

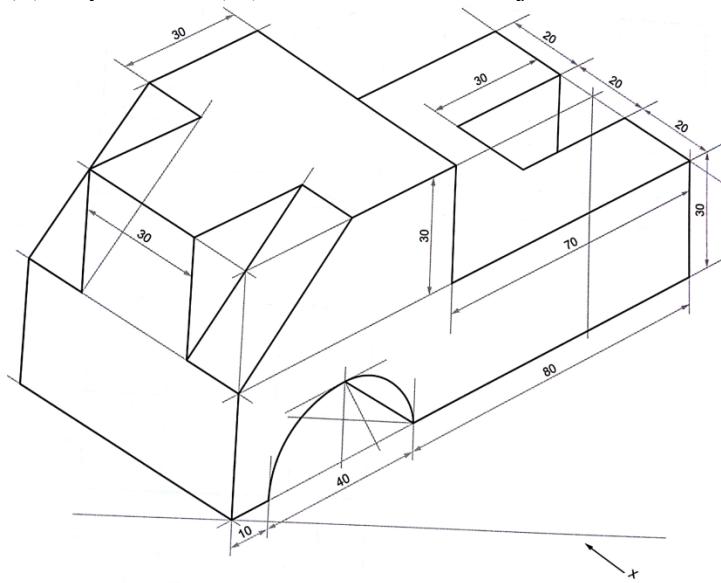


Solution:

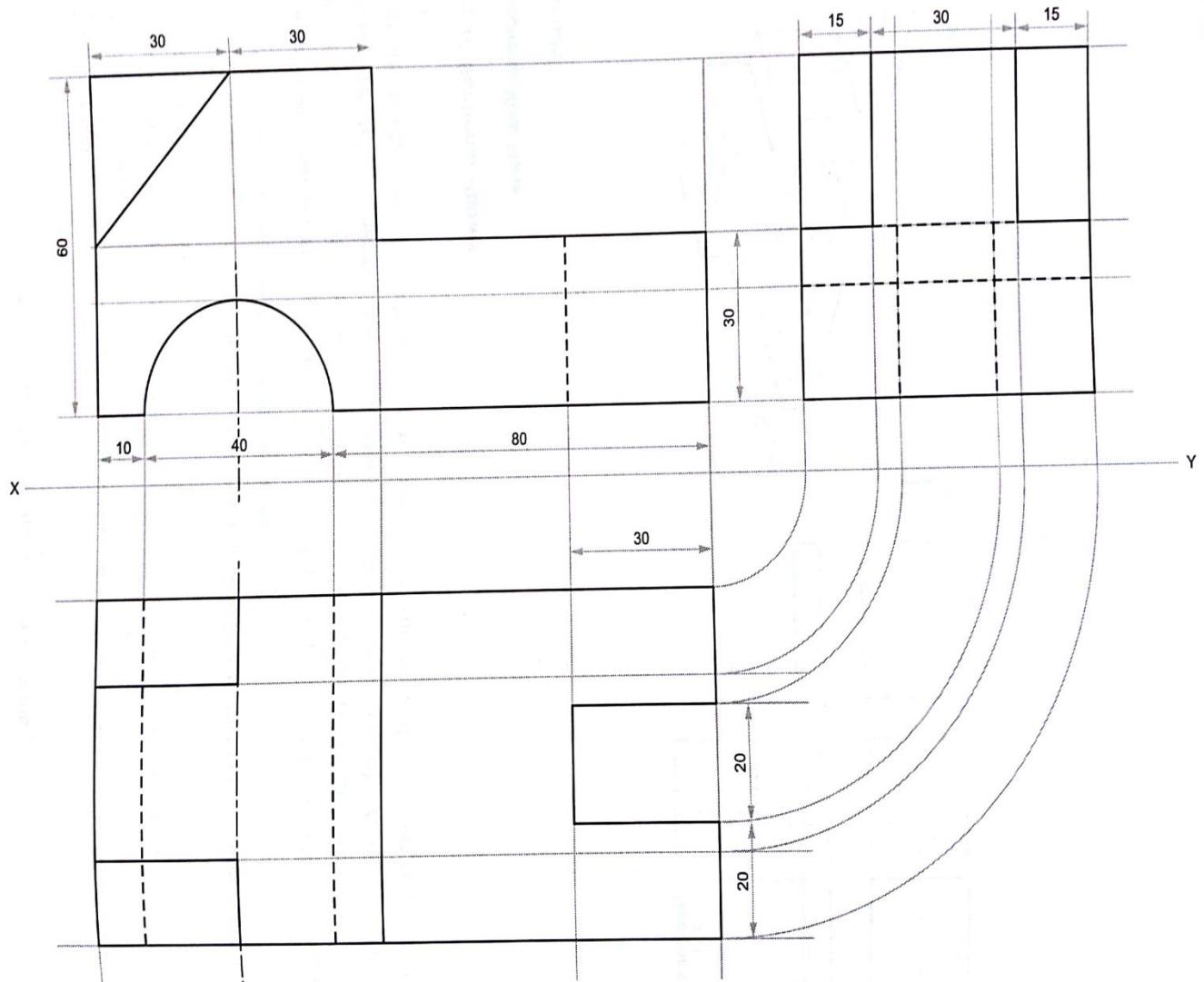


Problem 09: Figure shows pictorial view of object using first angle method of projection draw

(i)Front View (ii) Top view & (iii) Side view of the object



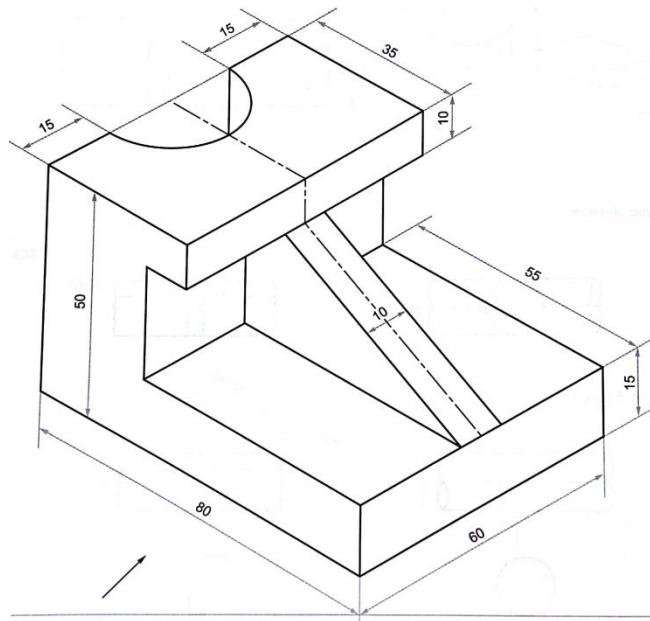
Solution:



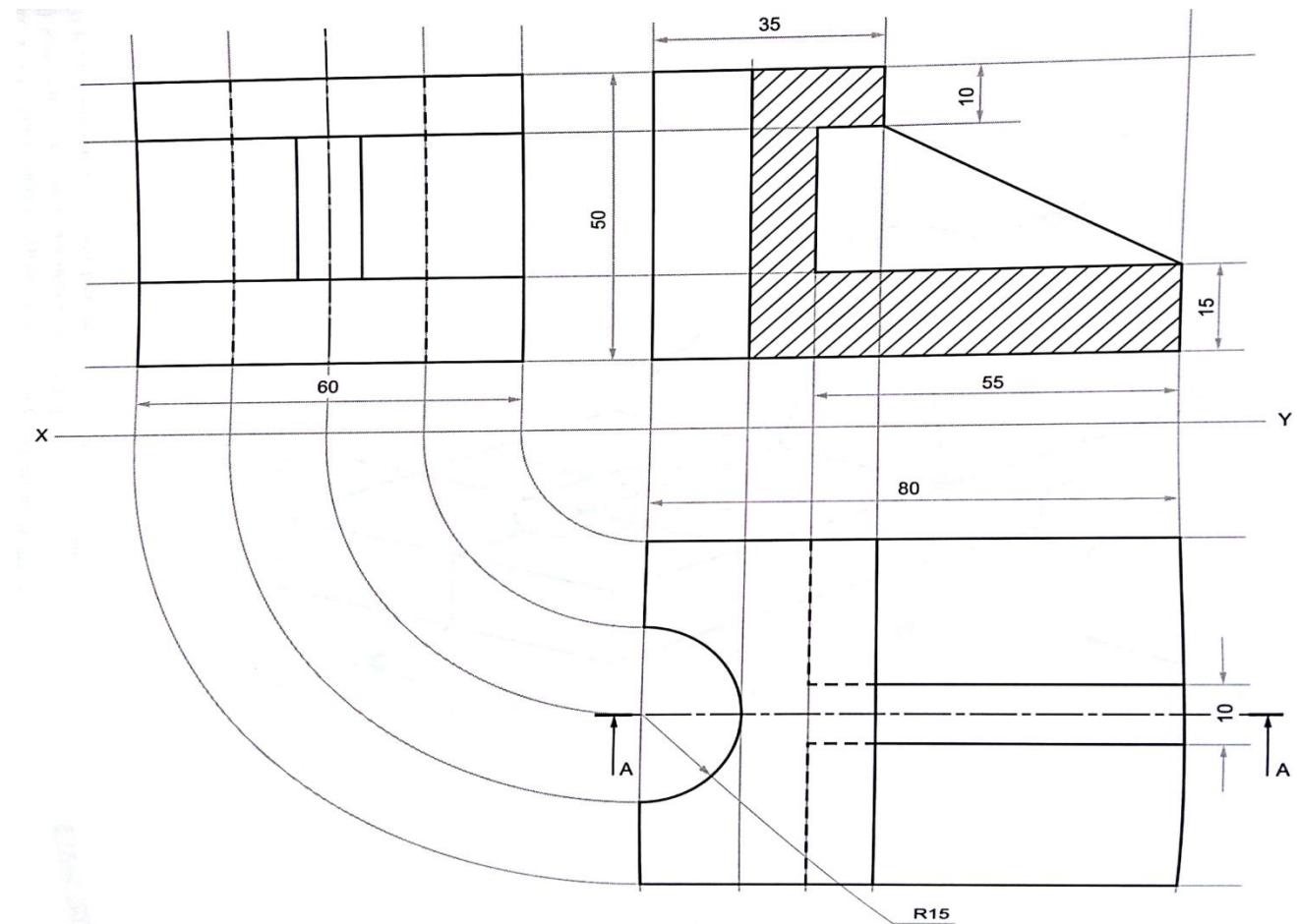
SECTIONAL ORTHOGRAPHIC PROJECTION

Problem 10: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

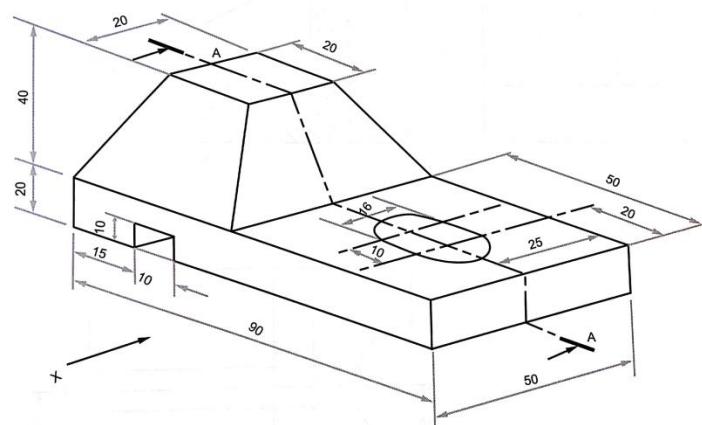


Solution:

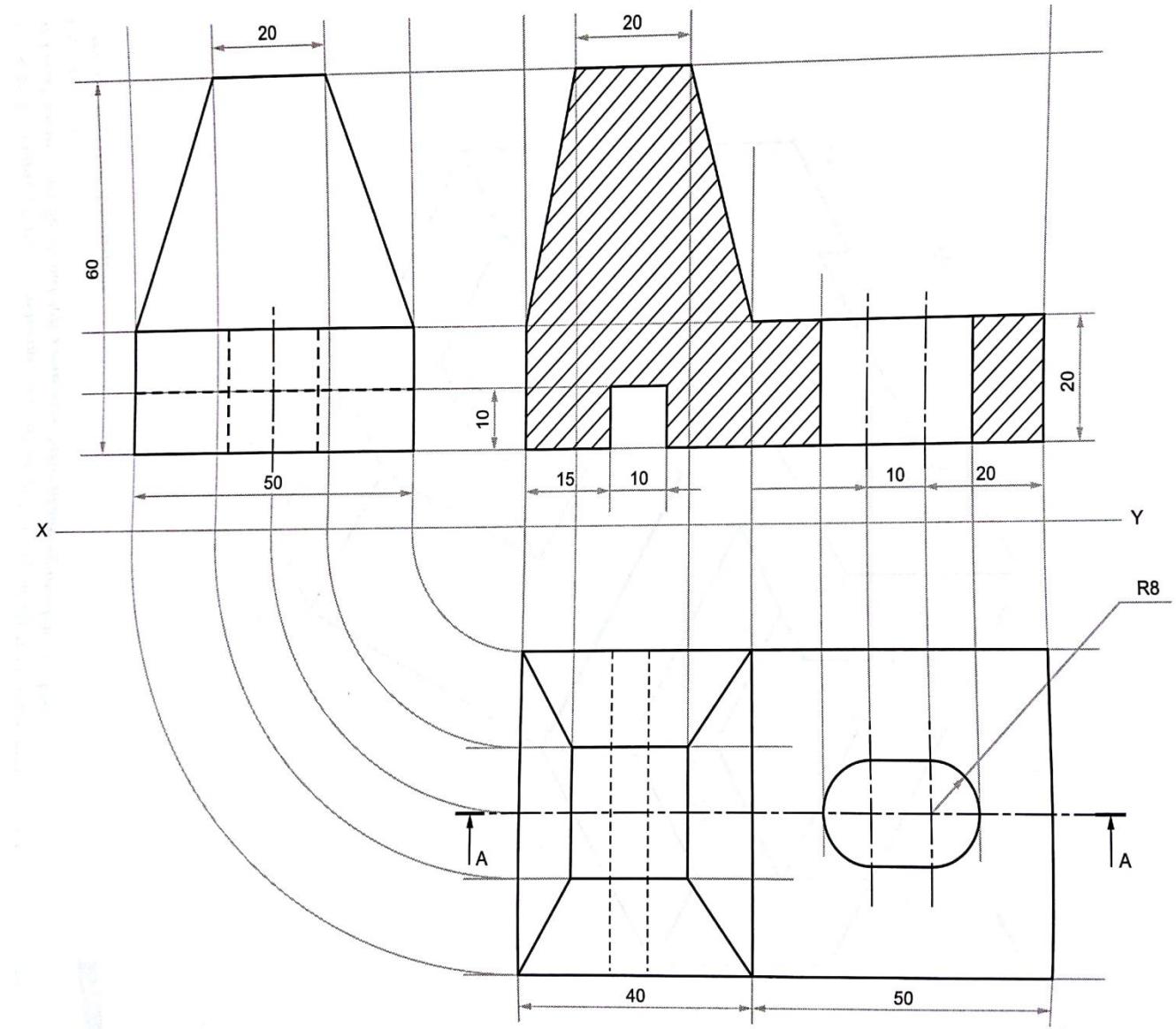


Problem 11: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

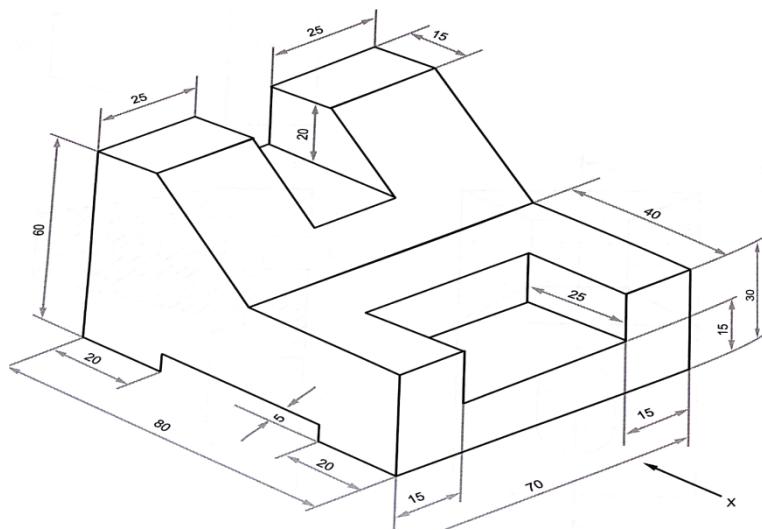


Solution:

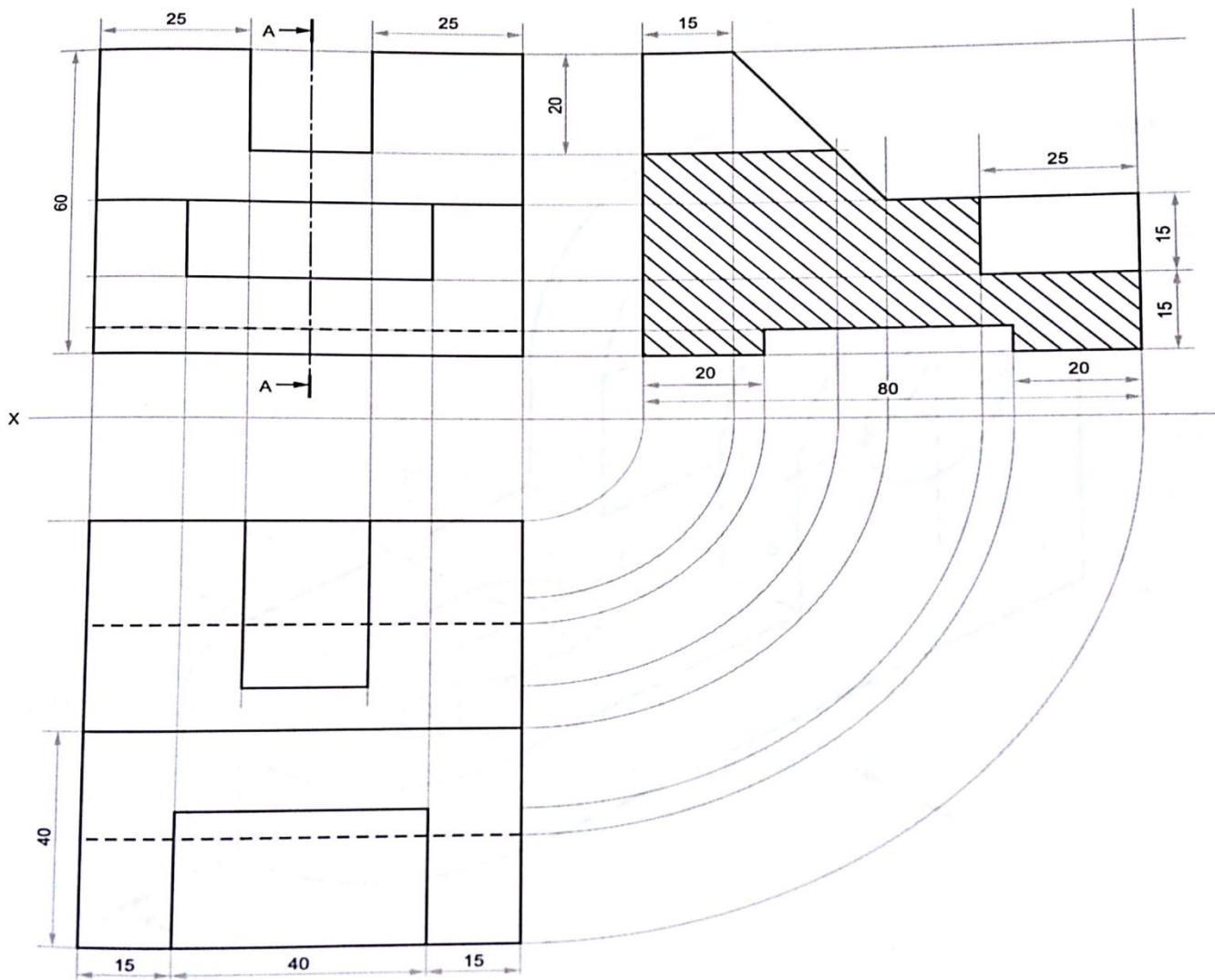


Problem 12: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

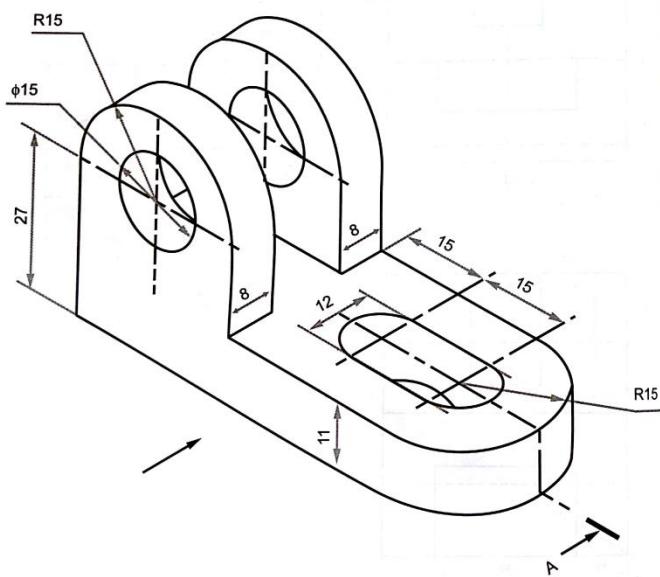


Solution:

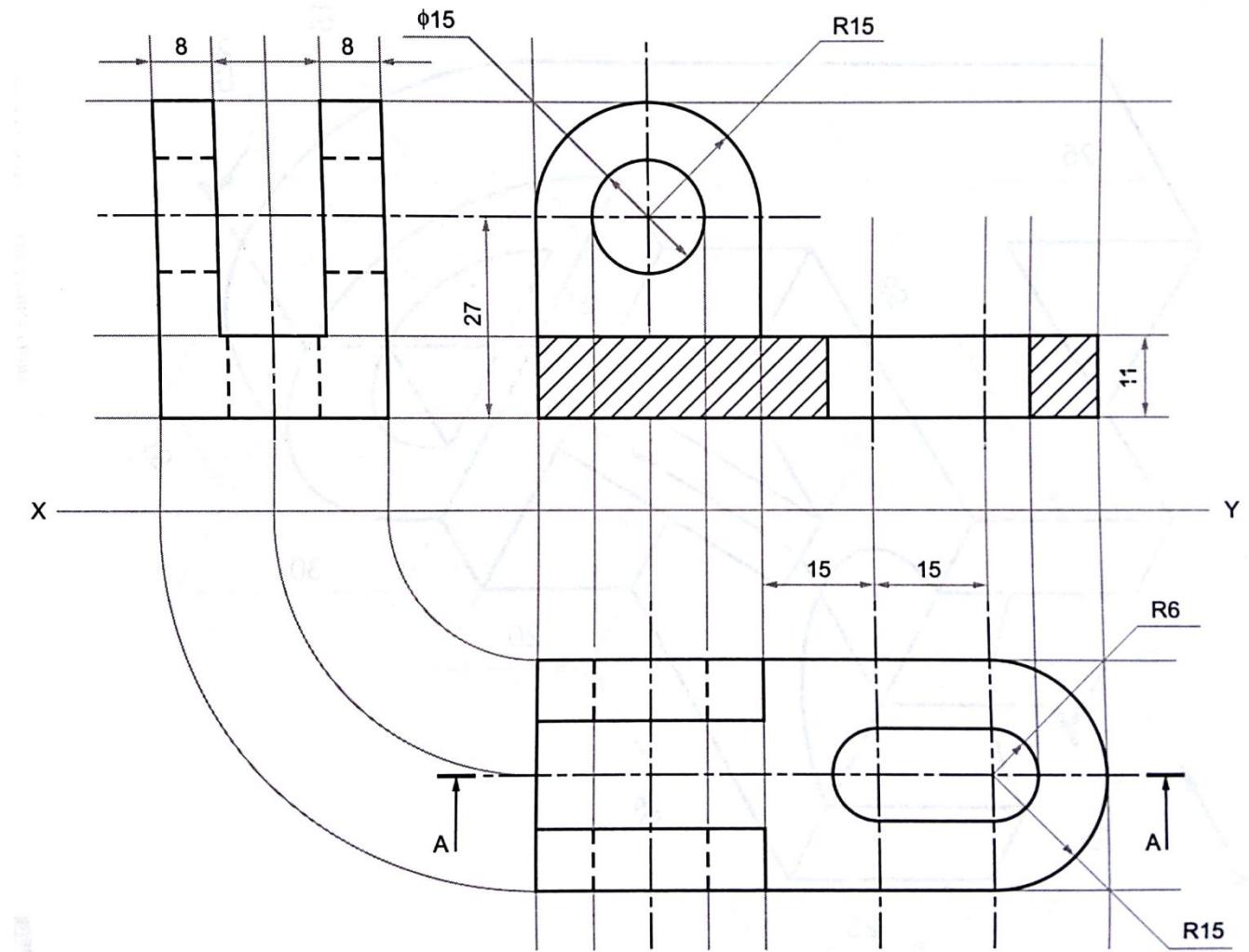


Problem 13: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

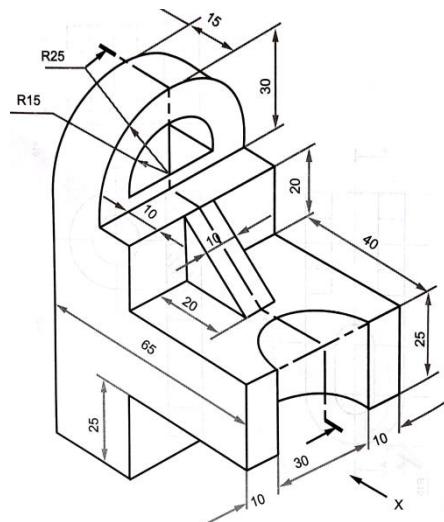


Solution:

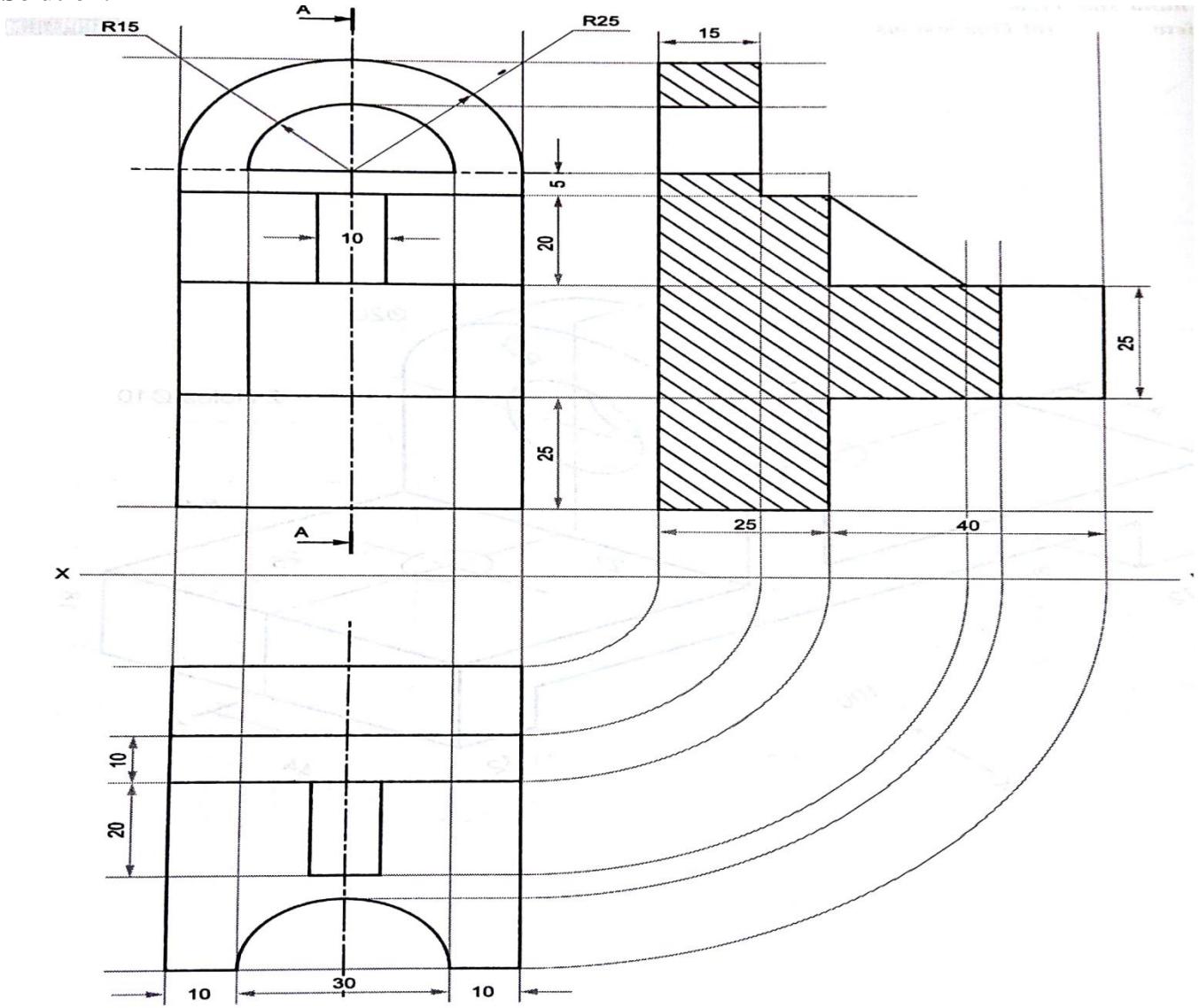


Problem 14: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

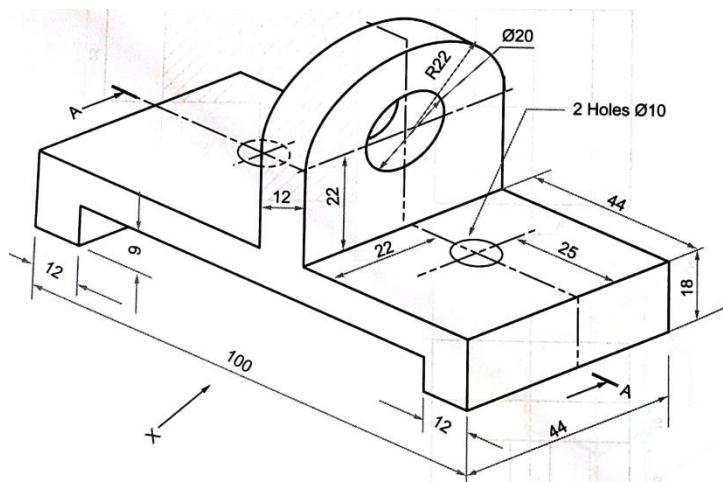


Solution:

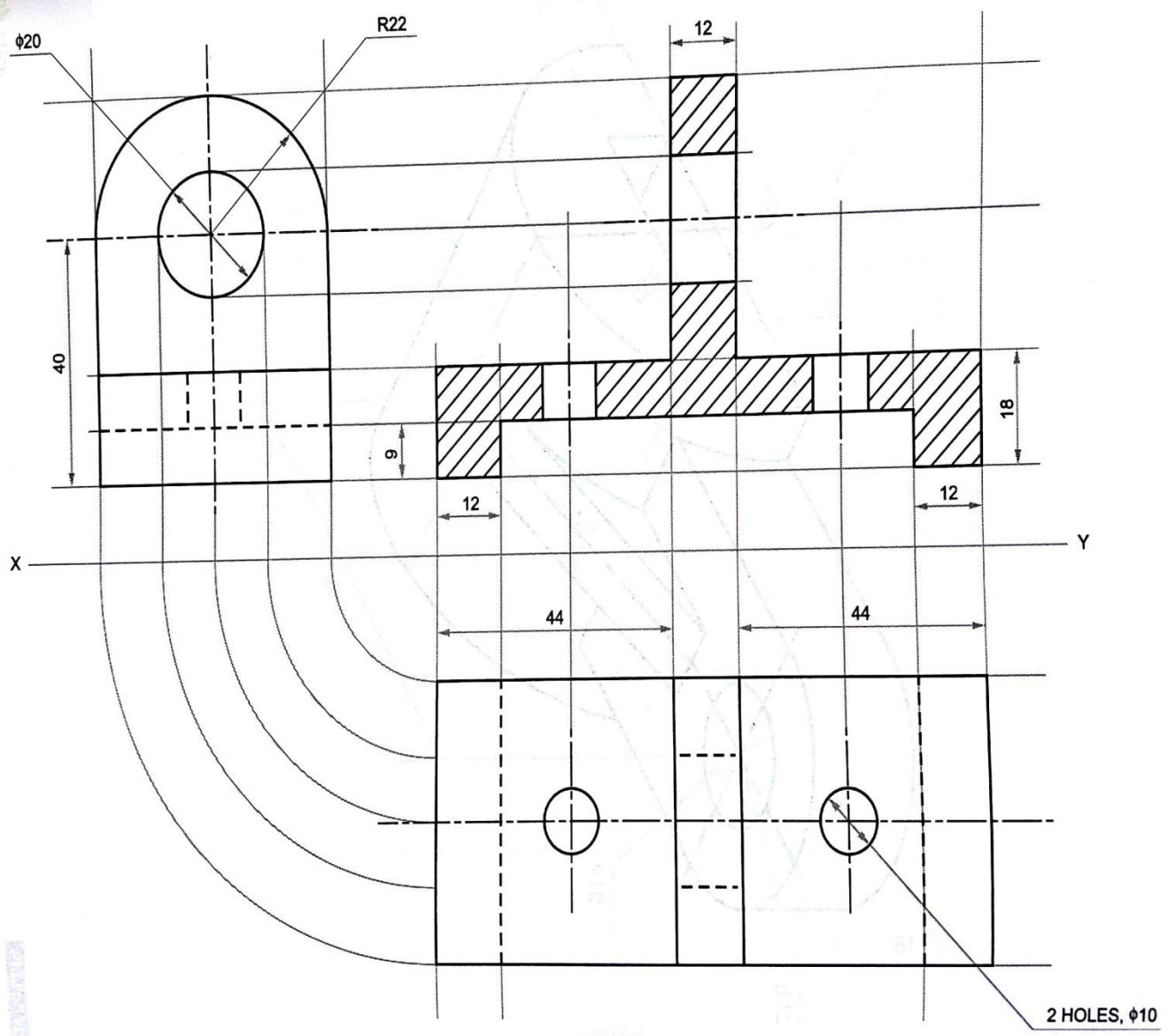


Problem 15: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

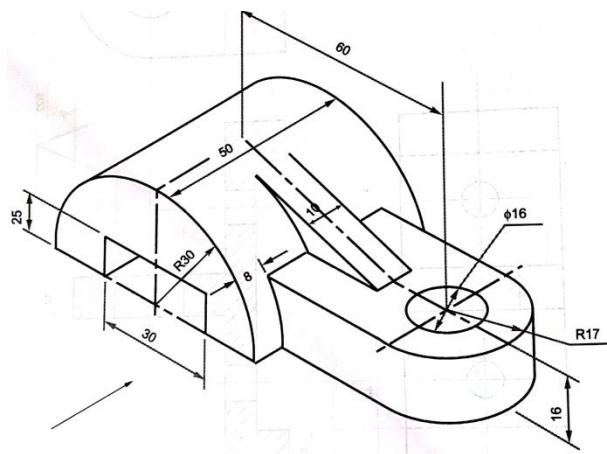


Solution:

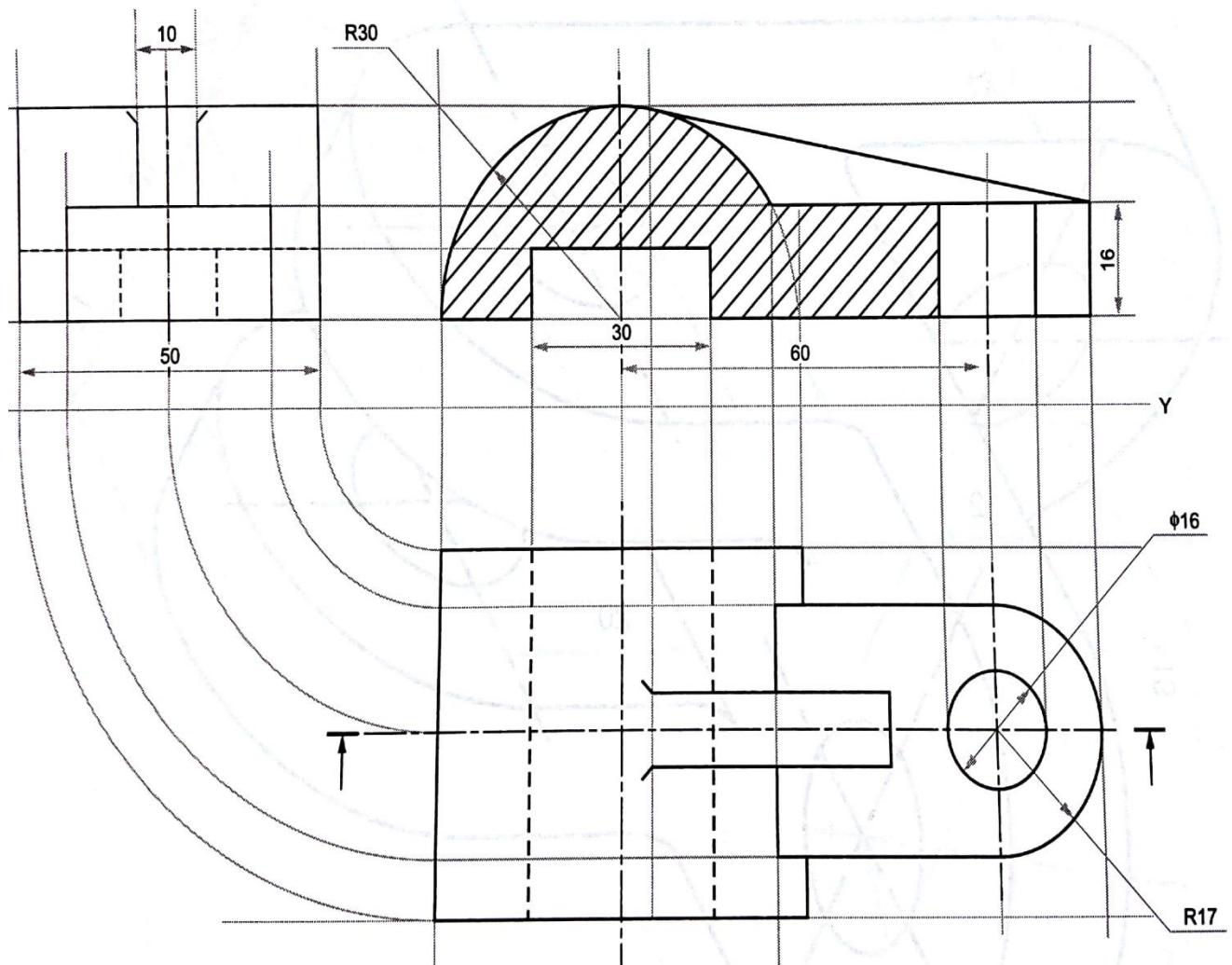


Problem 16: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

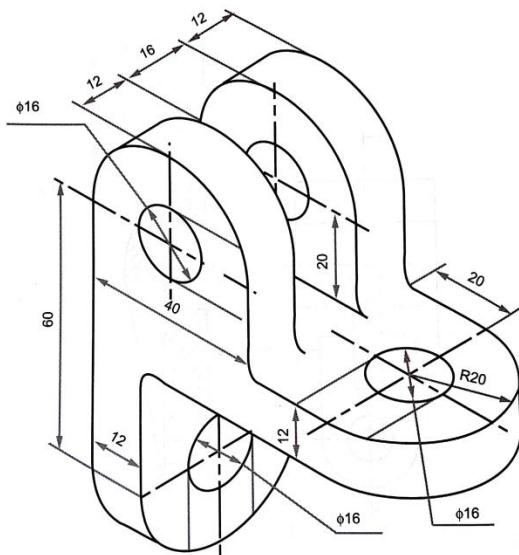


Solution:

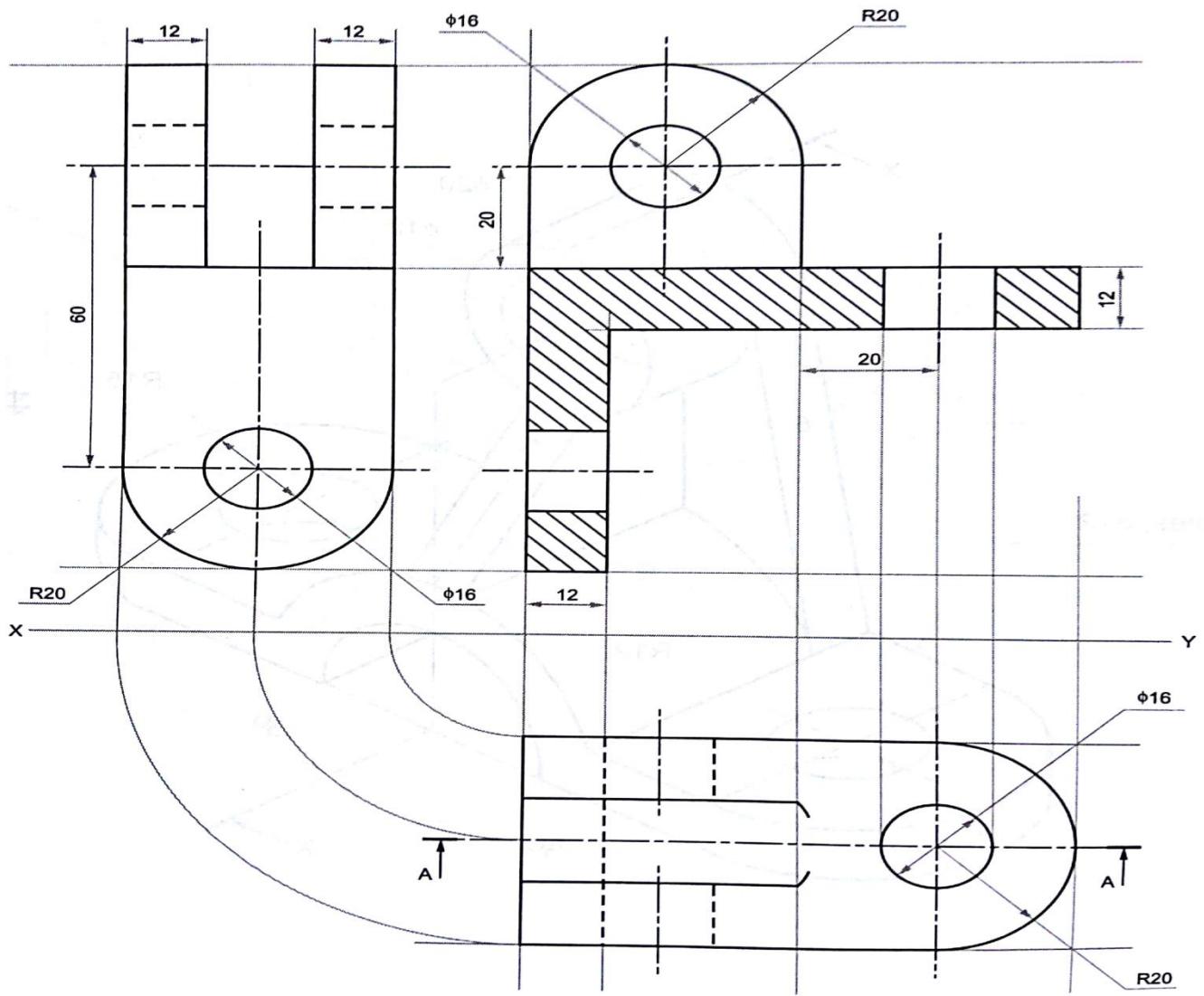


Problem 17: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

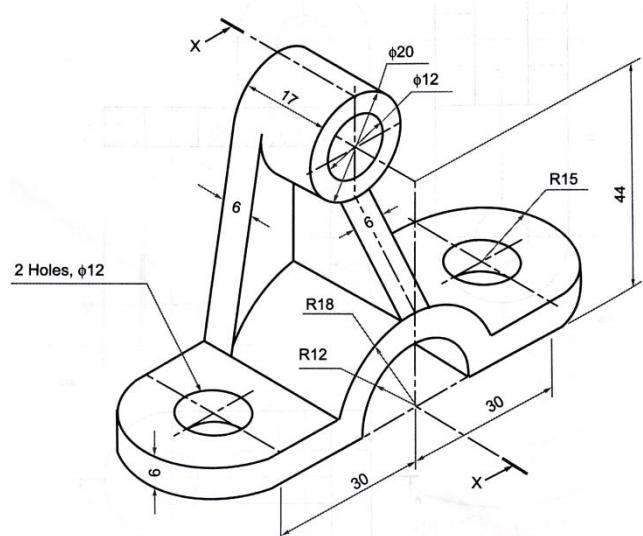


Solution:

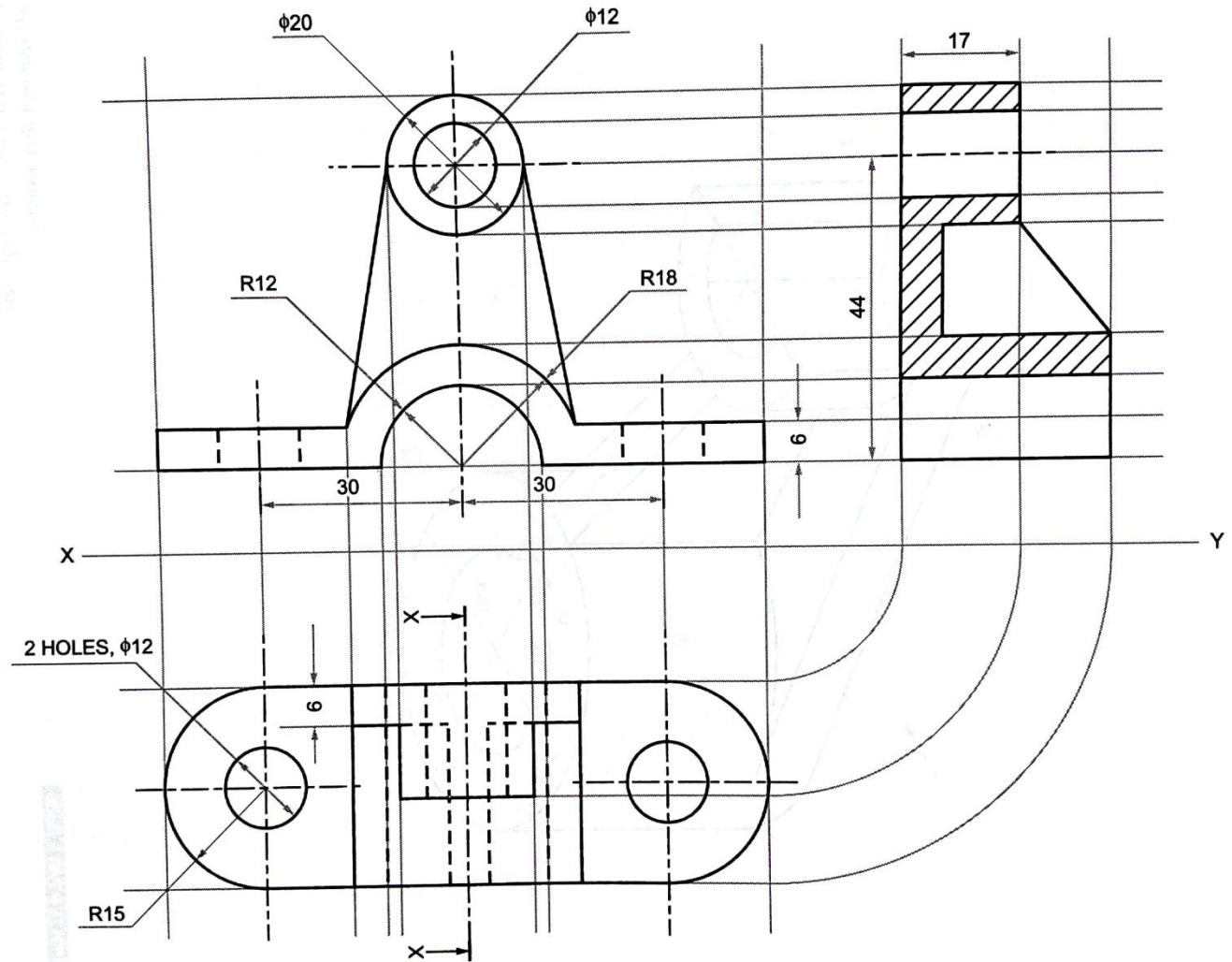


Problem 18: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

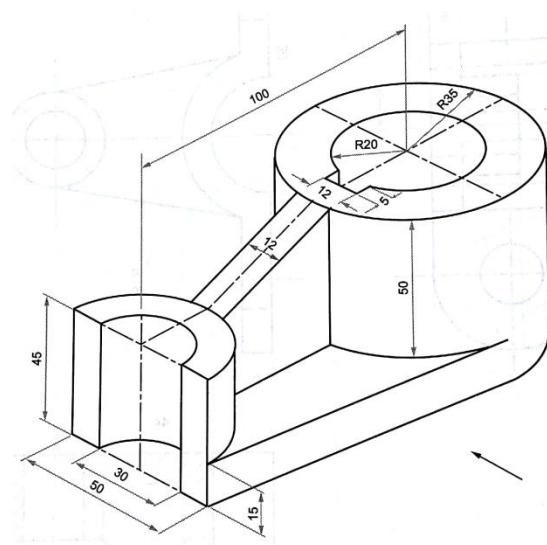


Solution:

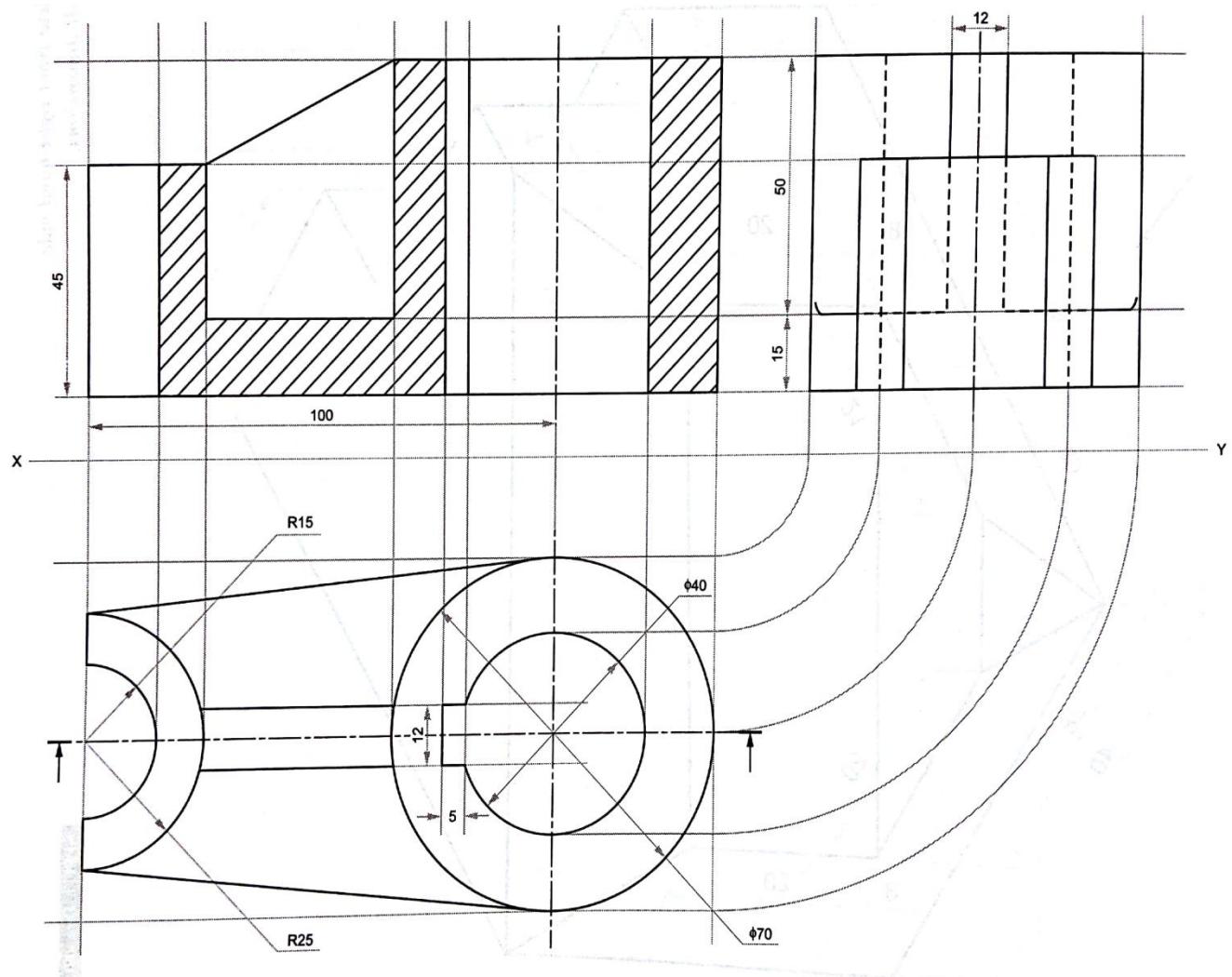


Problem 19: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

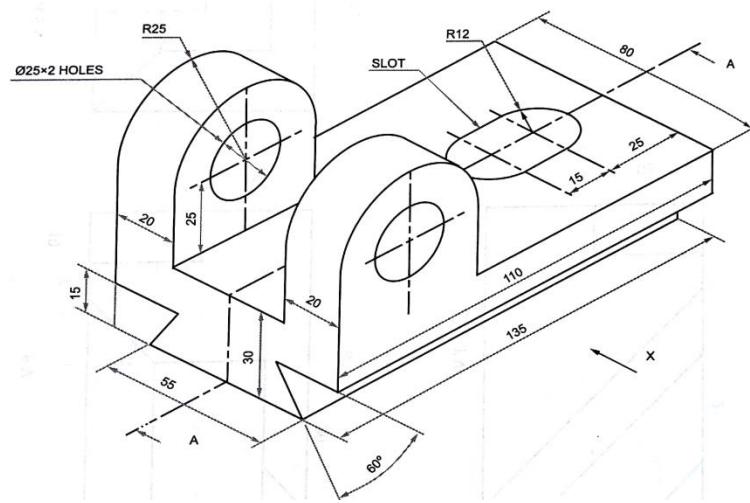


Solution:

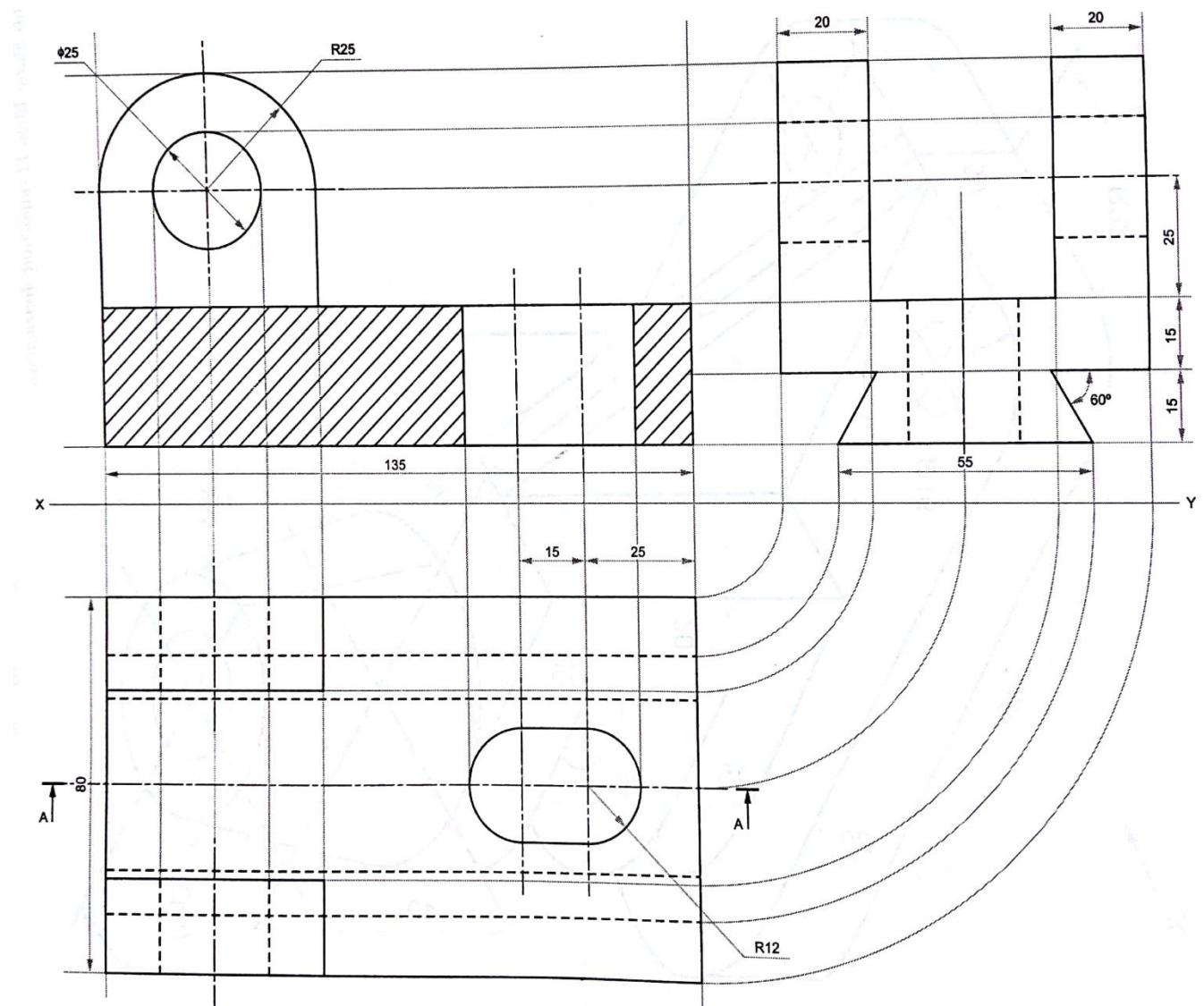


Problem 20: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object

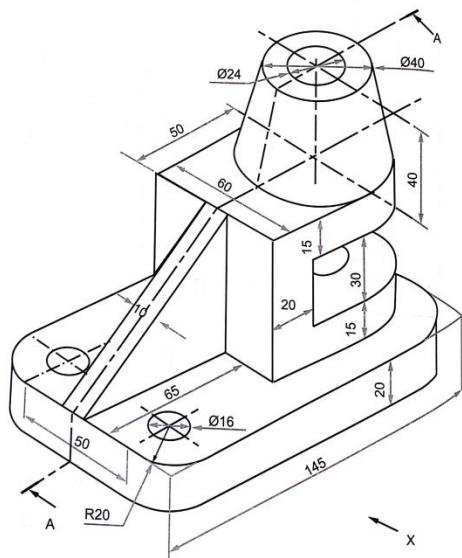


Solution:

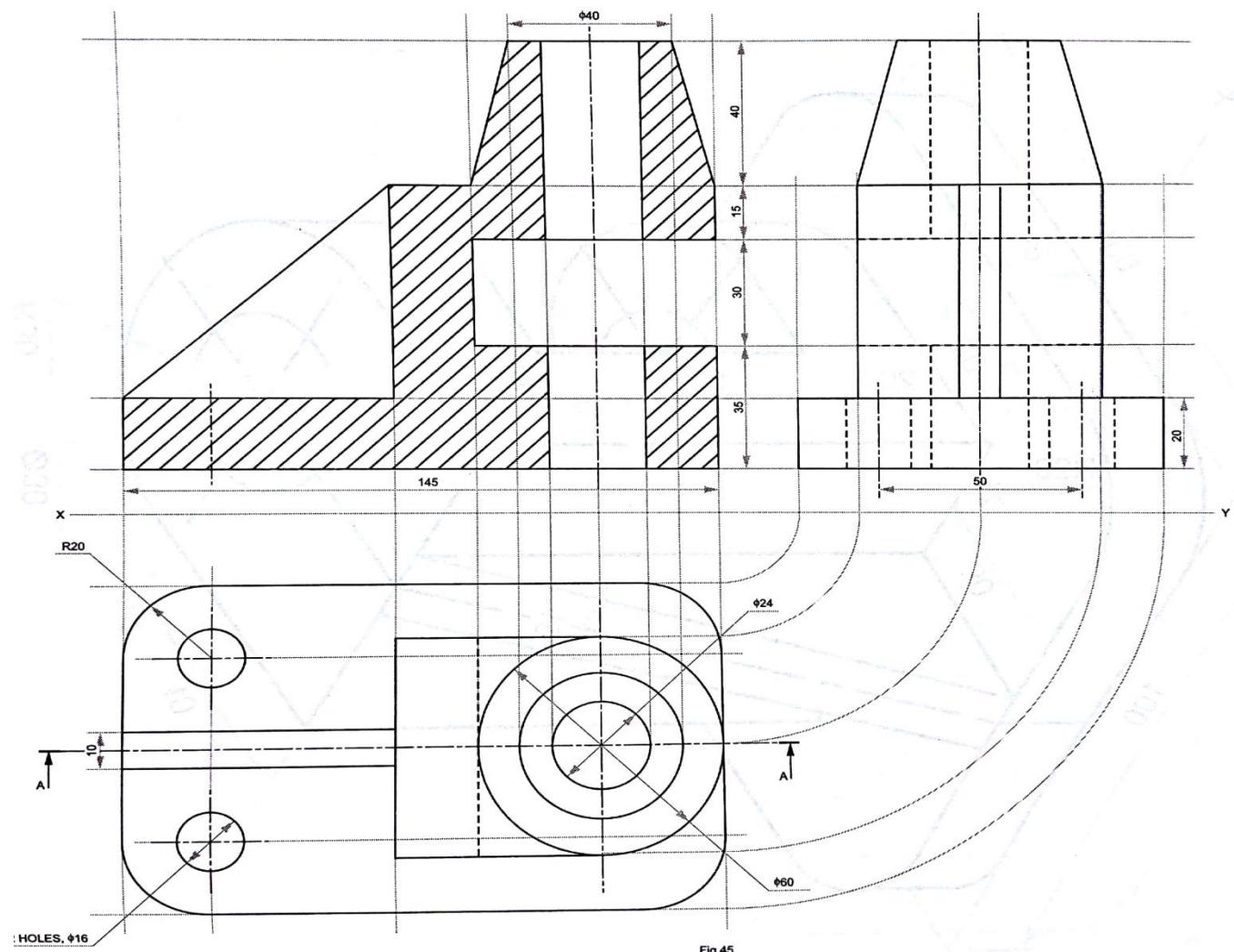


Problem 21: Figure shows pictorial view of object using first angle method of projection draw

(i)Sectional Front View (ii) Top view & (iii) Side view of the object



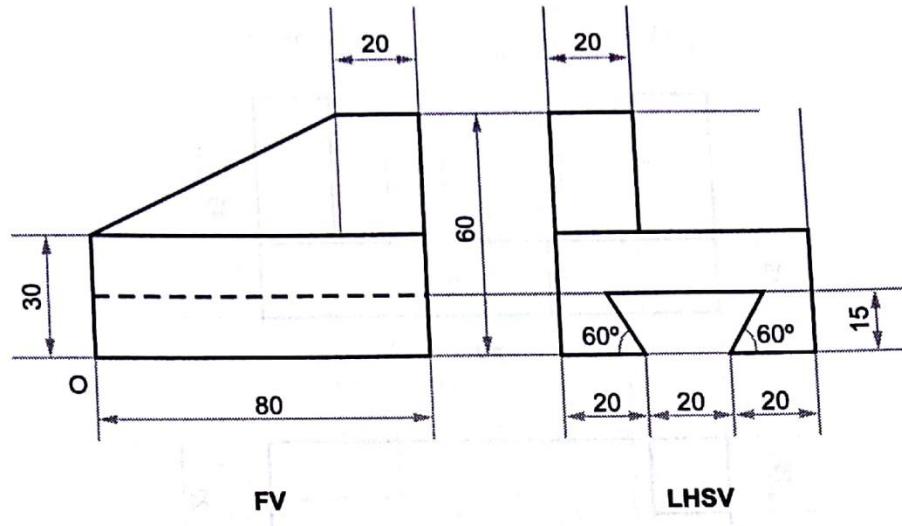
Solution:



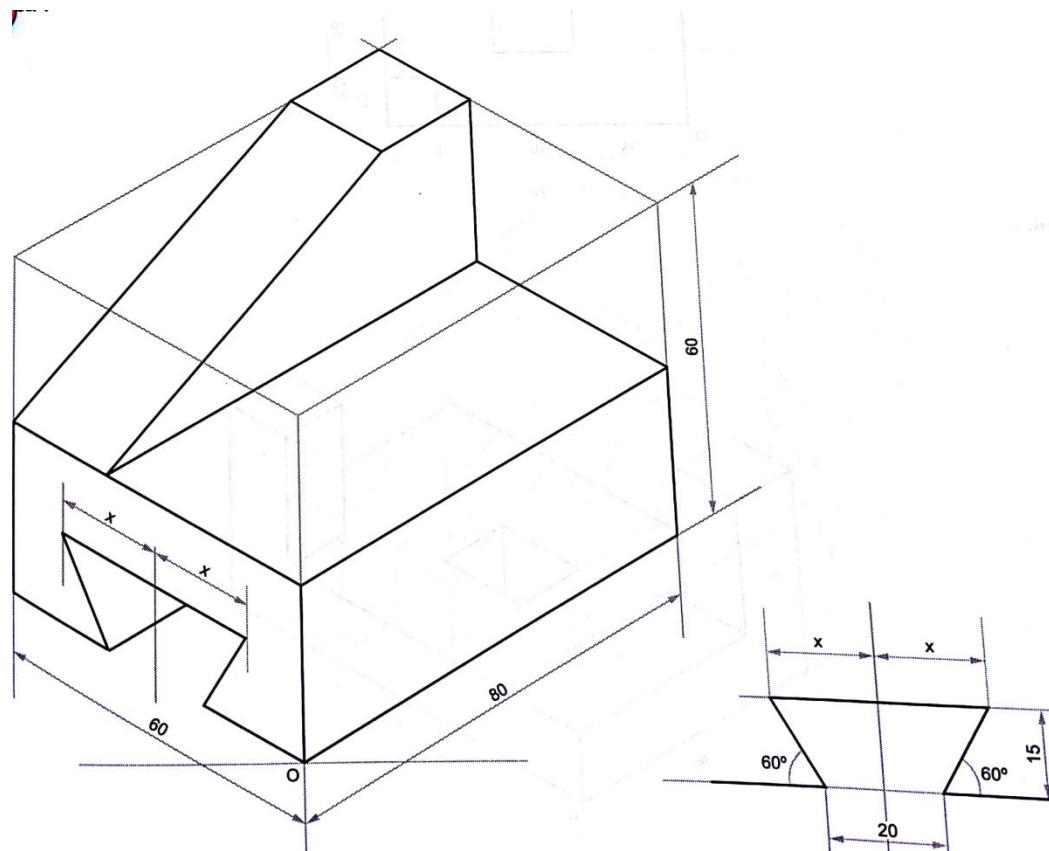
Question Bank

Unit V Isometric projection

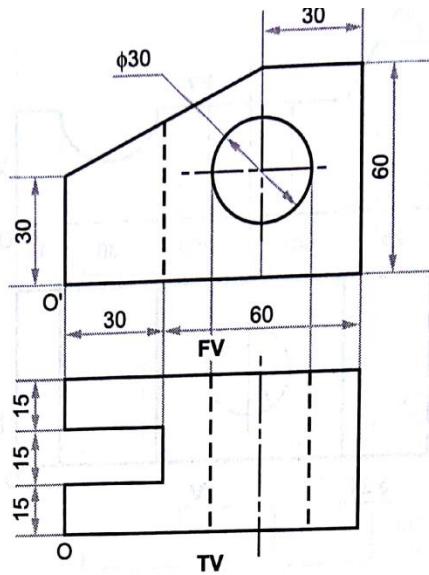
Problem 01: Draw isometric view from following orthographic views.



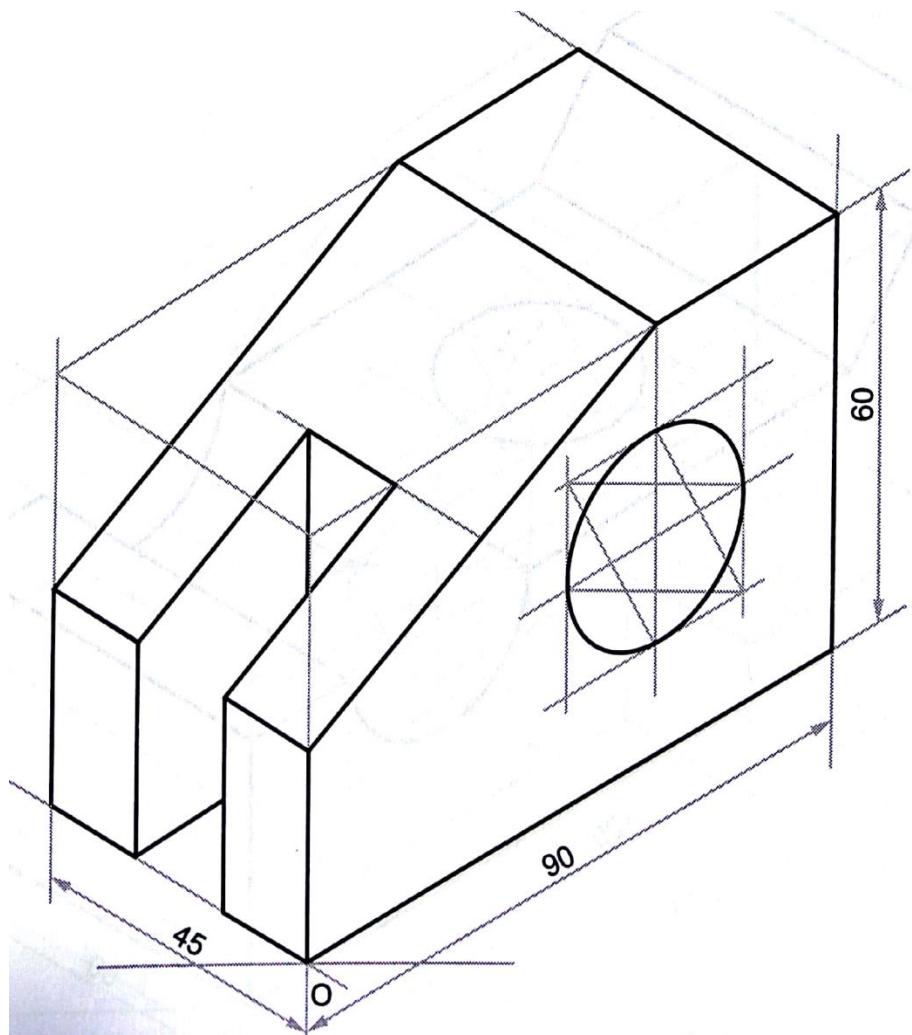
Solution:



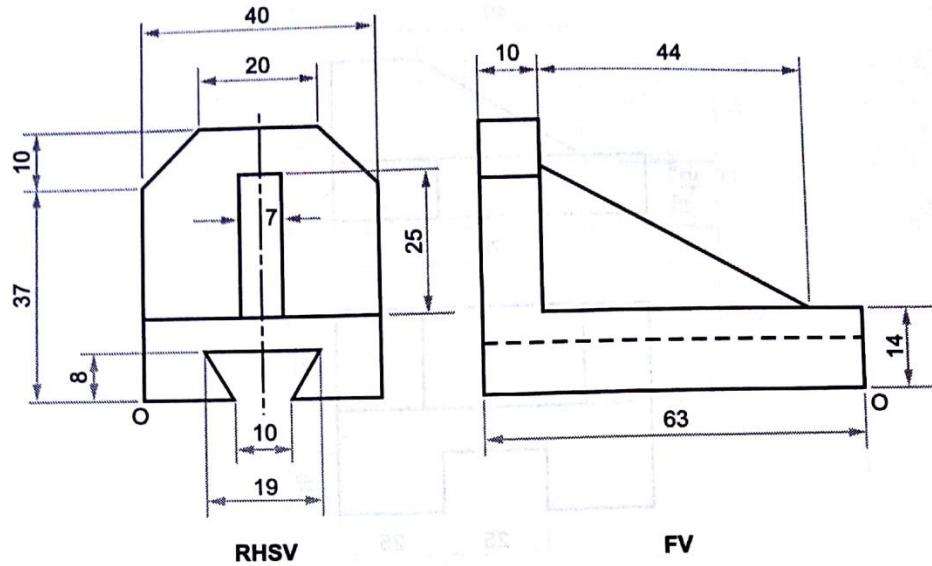
Problem 02: Draw isometric view from following orthographic views.



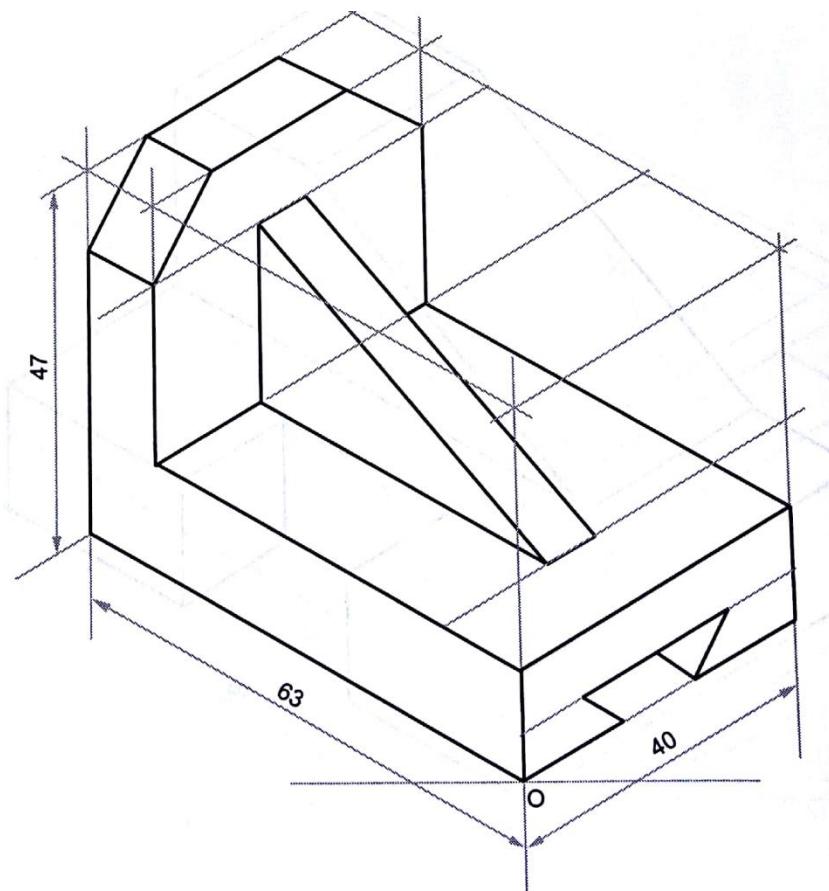
Solution:



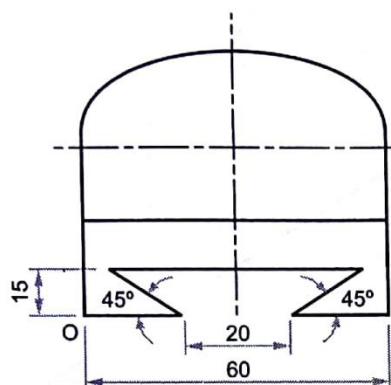
Problem 03: Draw isometric view from following orthographic views.



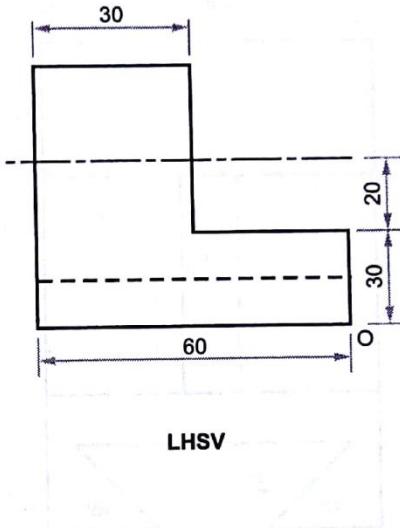
Solution:



Problem 04: Draw isometric view from following orthographic views.

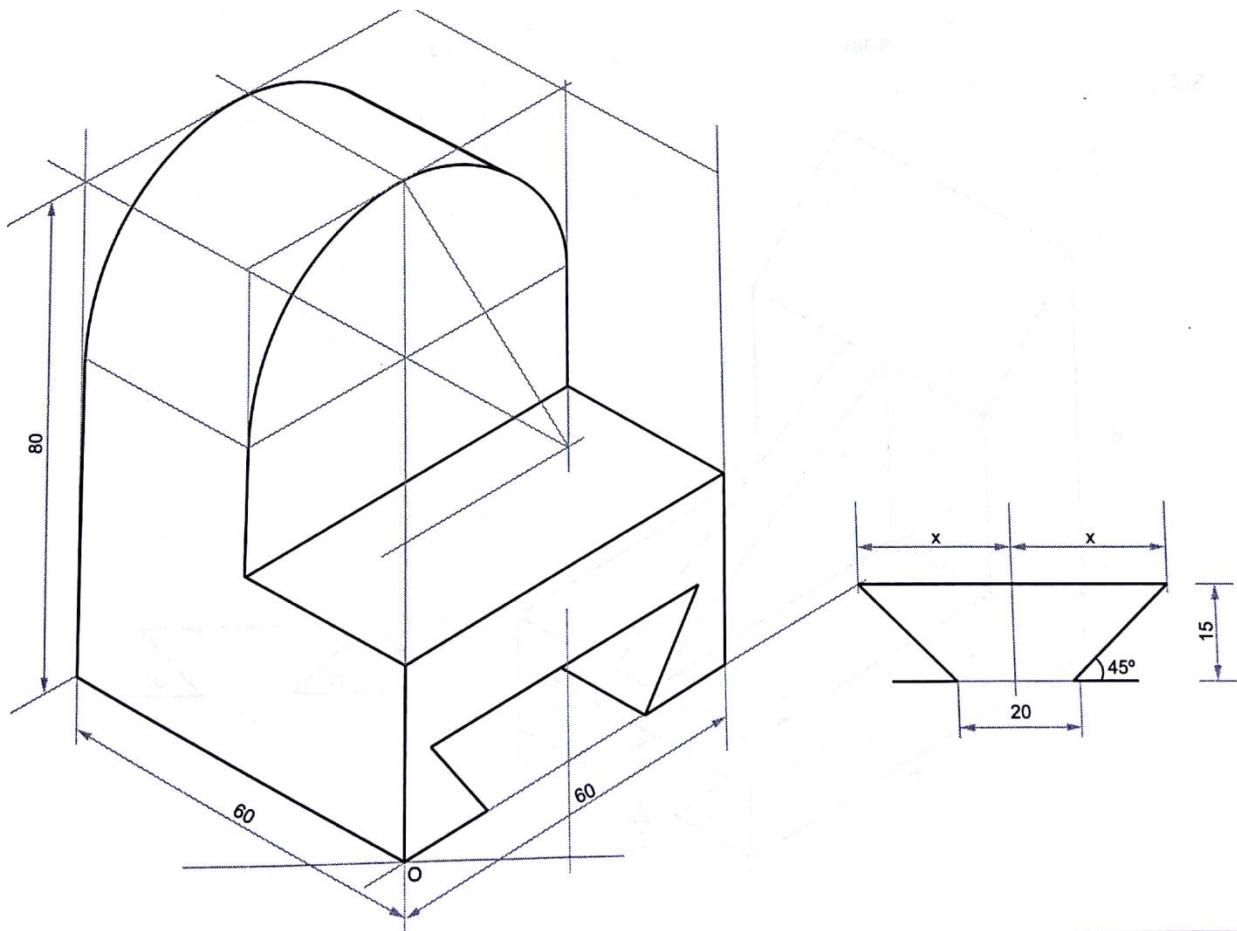


FV

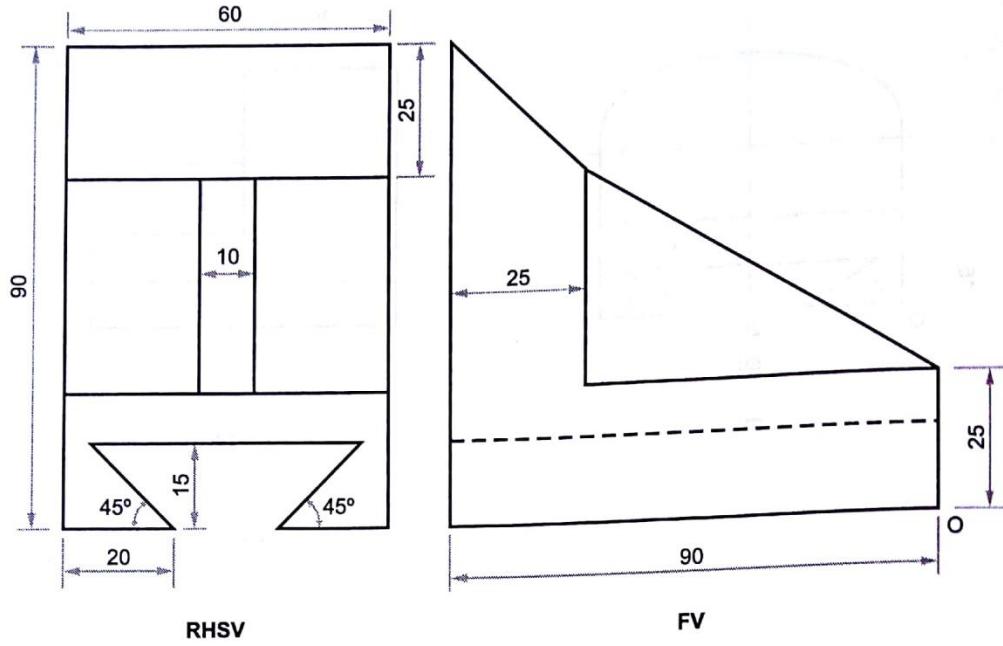


LHSV

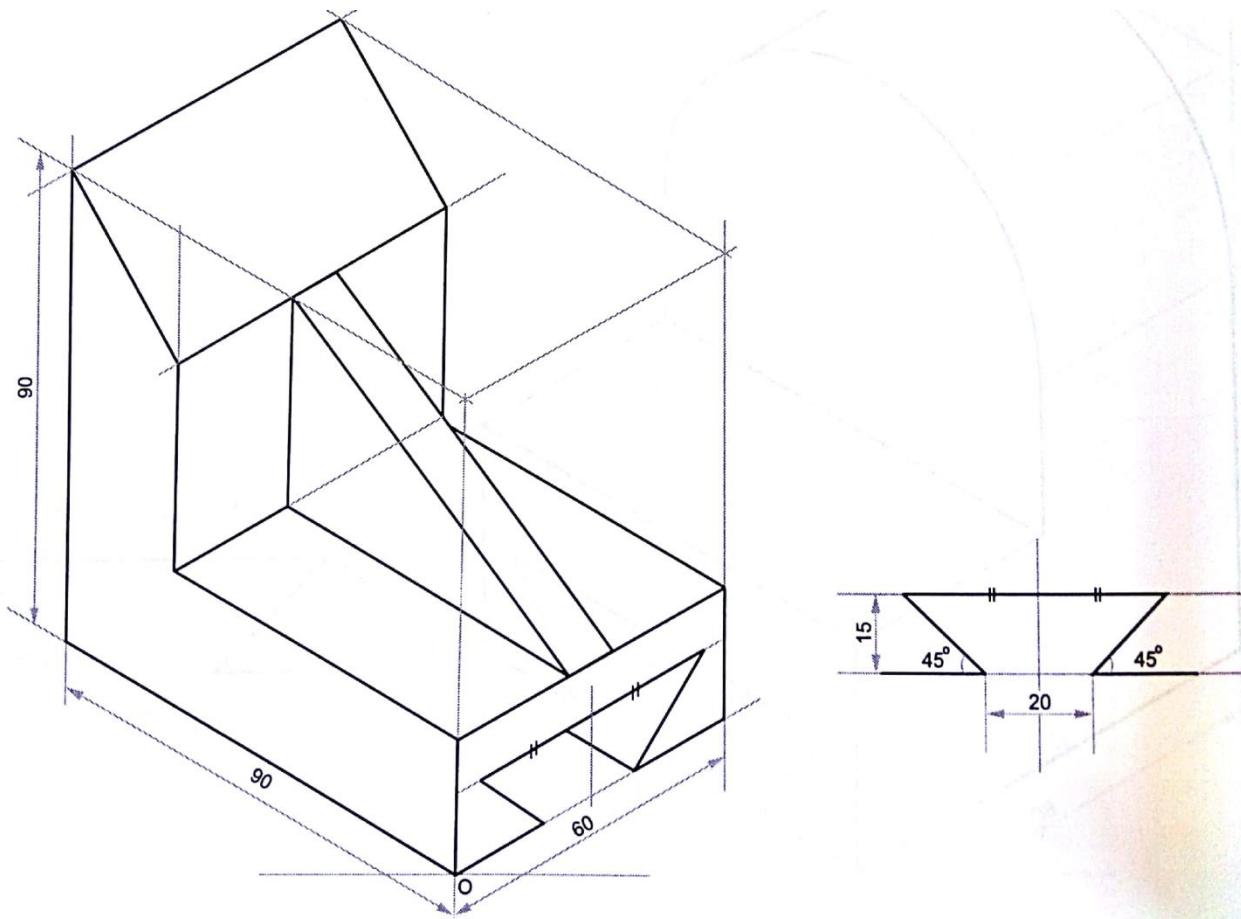
Solution:



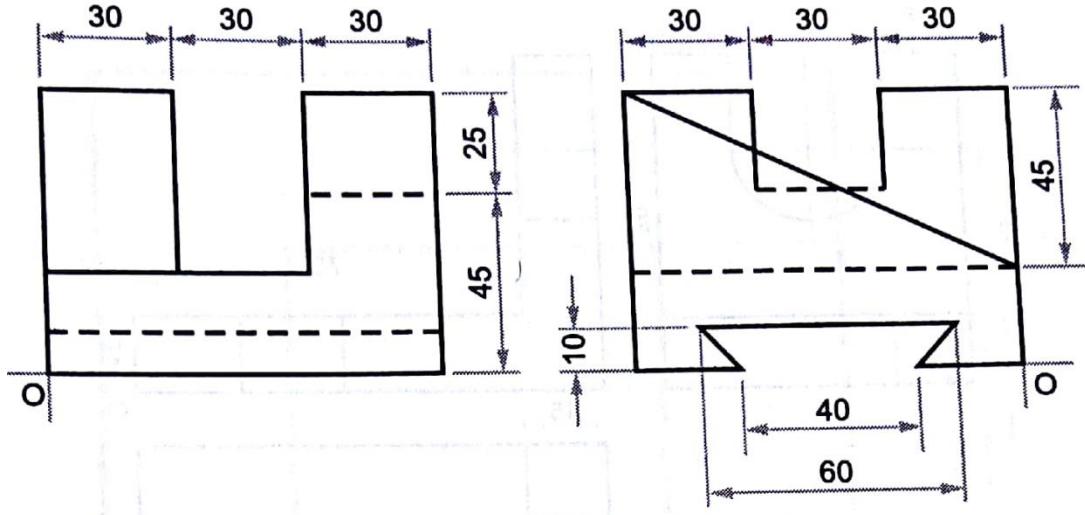
Problem 05: Draw isometric view from following orthographic views.



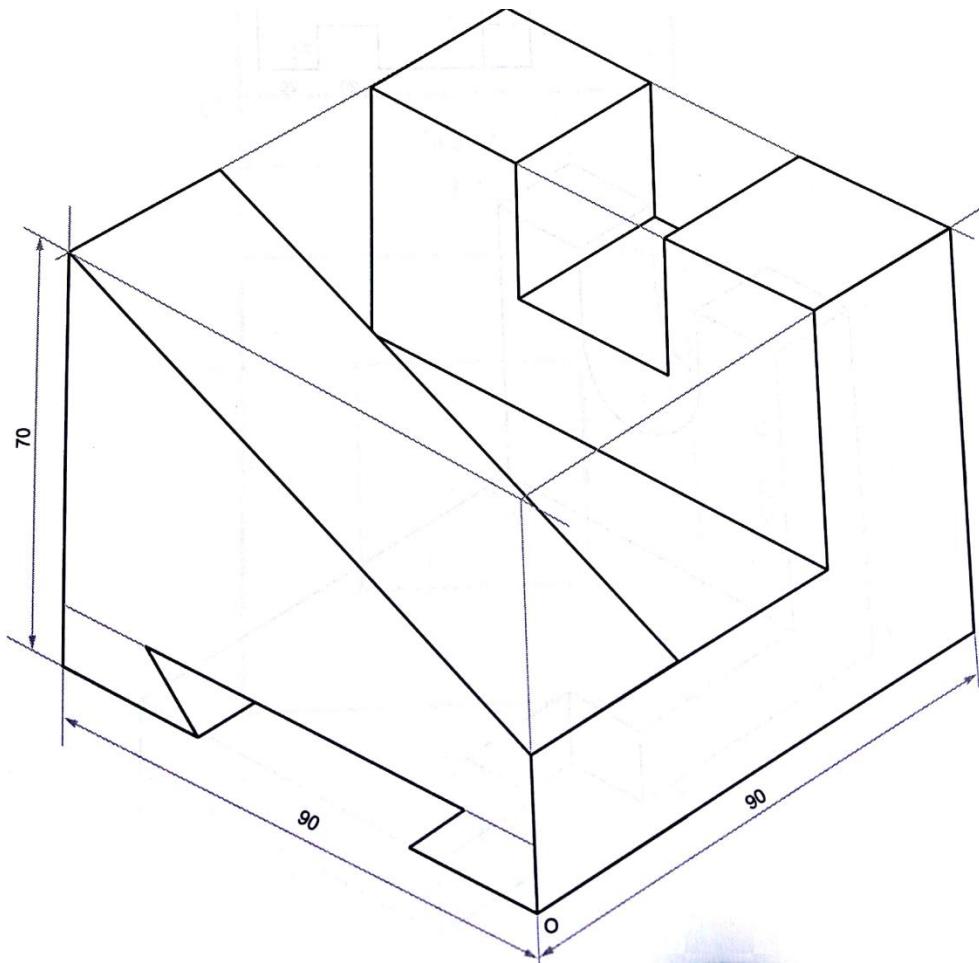
Solution:



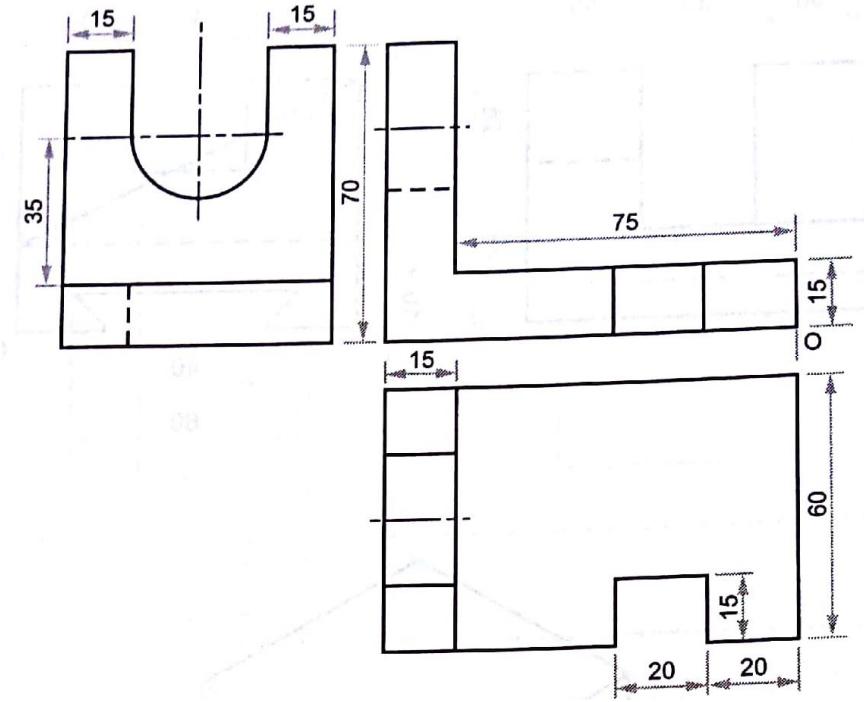
Problem 06: Draw isometric view from following orthographic views.



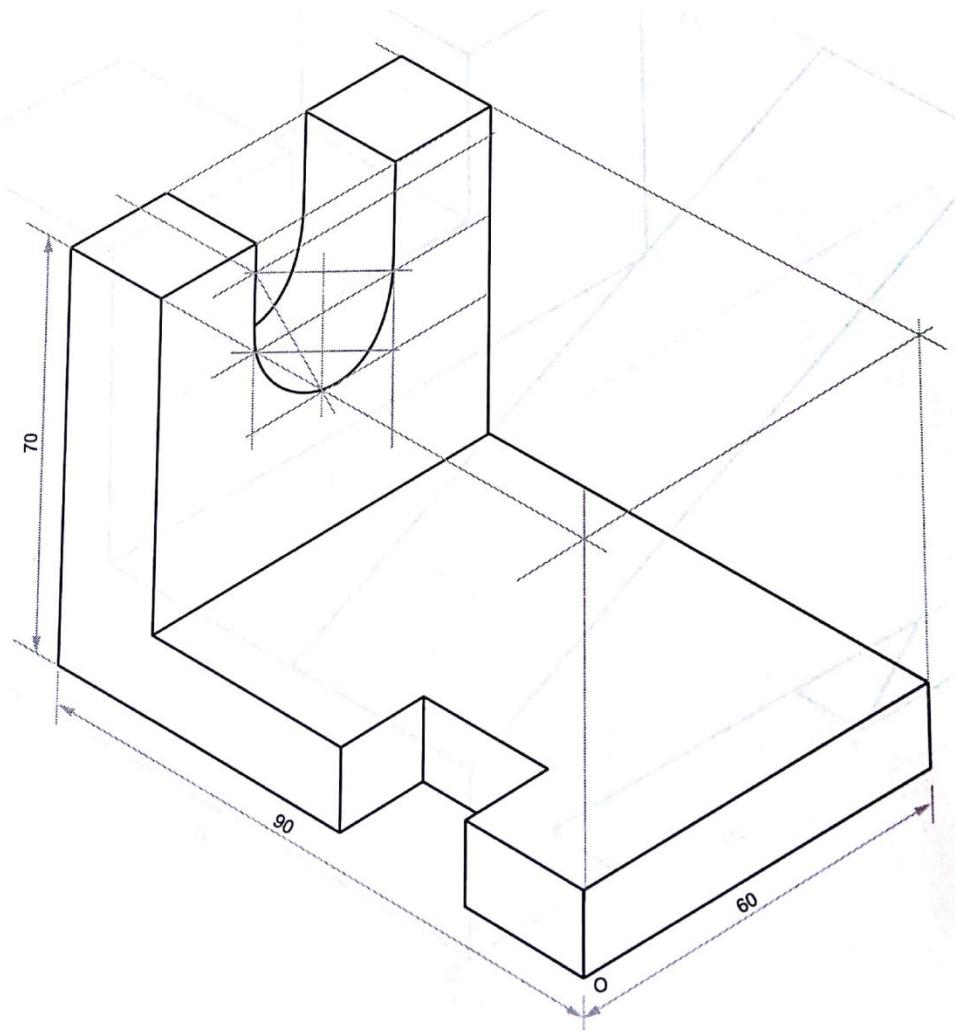
Solution:



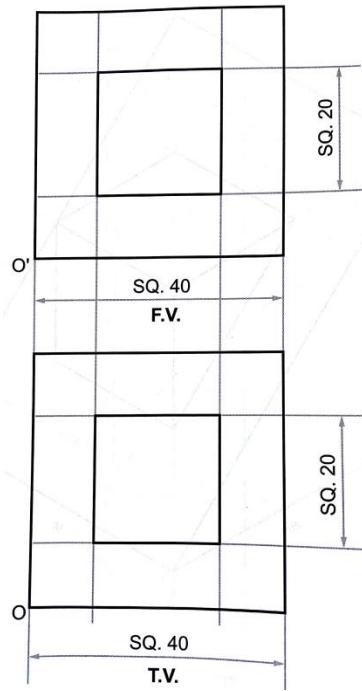
Problem 07: Draw isometric view from following orthographic views.



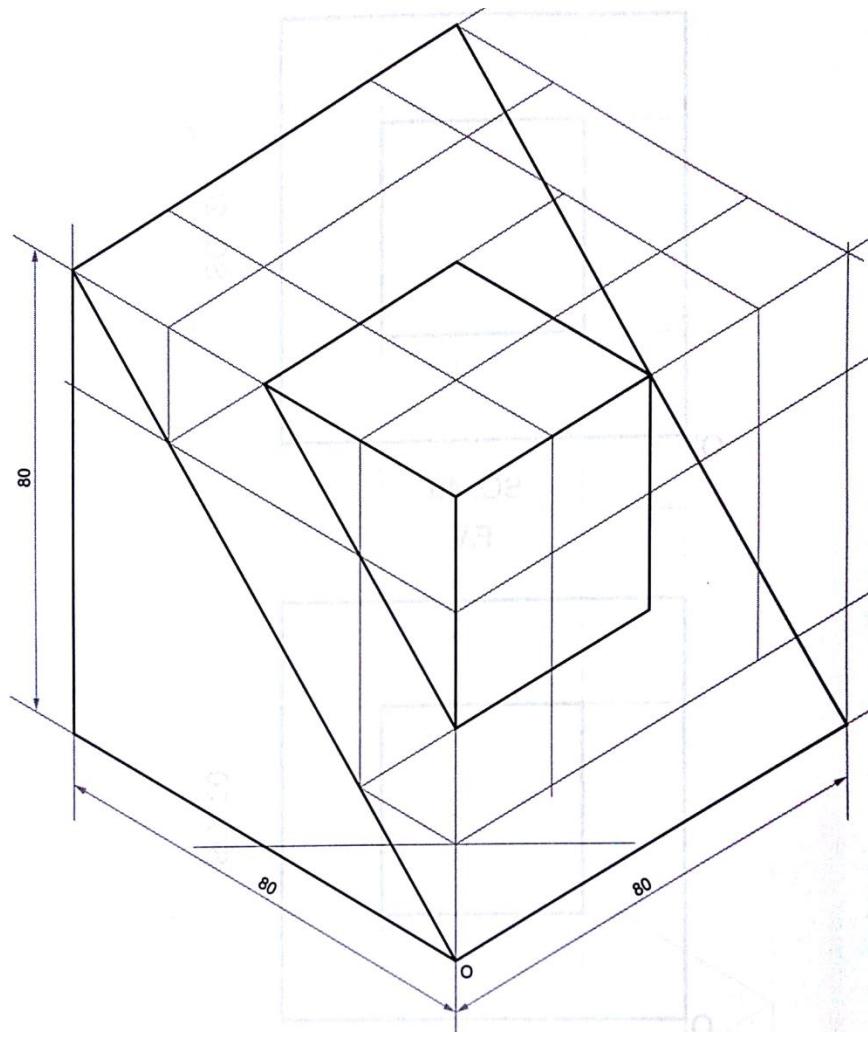
Solution:



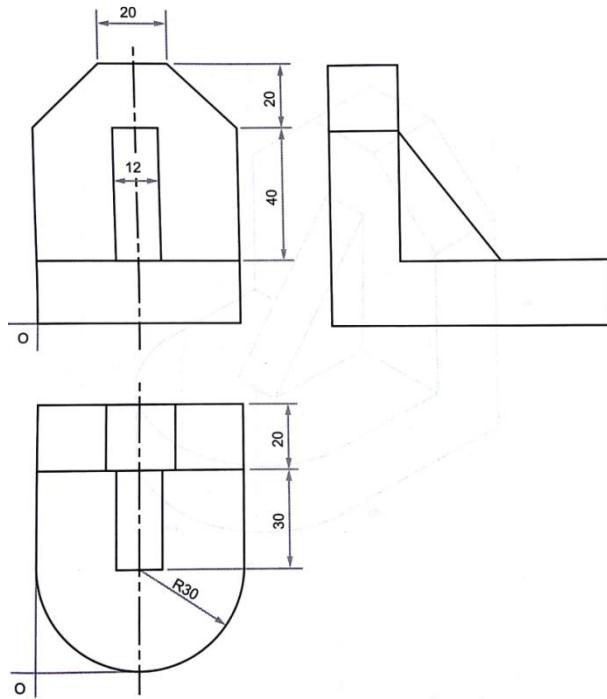
Problem 08: Draw isometric view from following orthographic views.



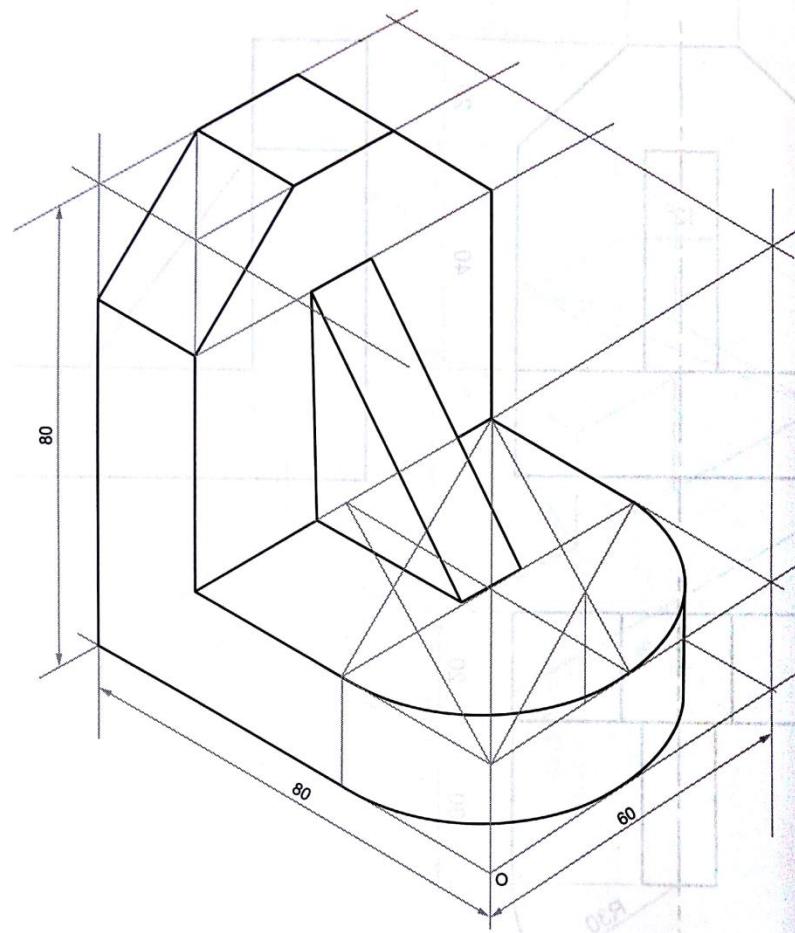
Solution:



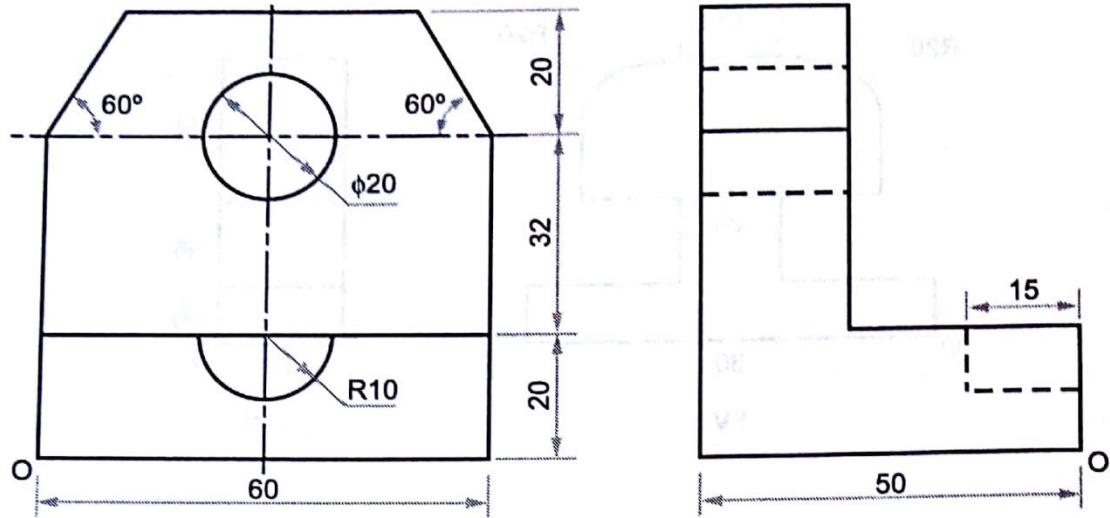
Problem 09: Draw isometric view from following orthographic views.



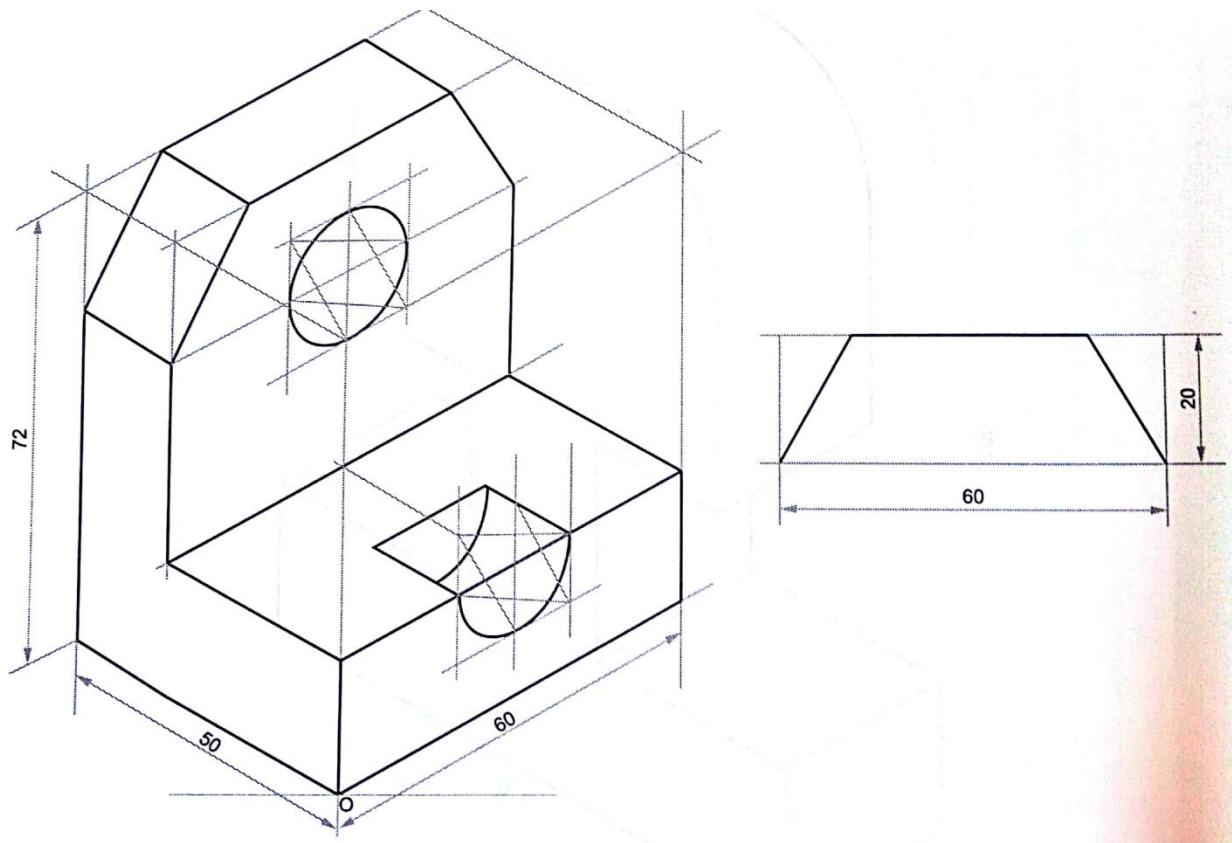
Solution:



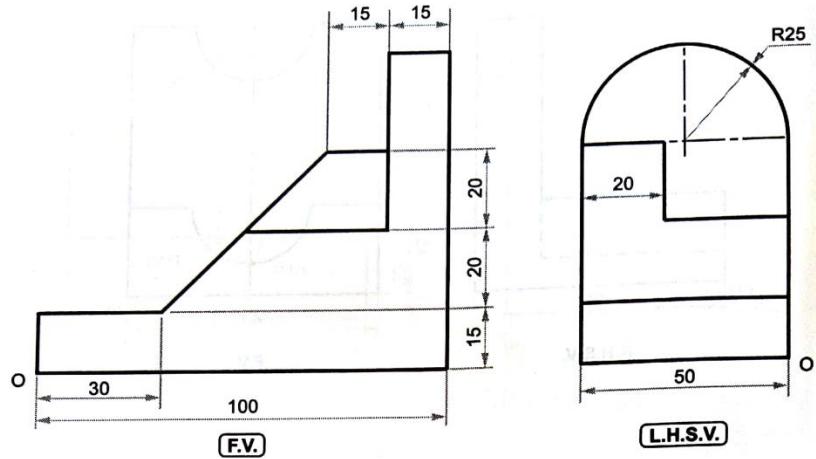
Problem 10: Draw isometric view from following orthographic views.



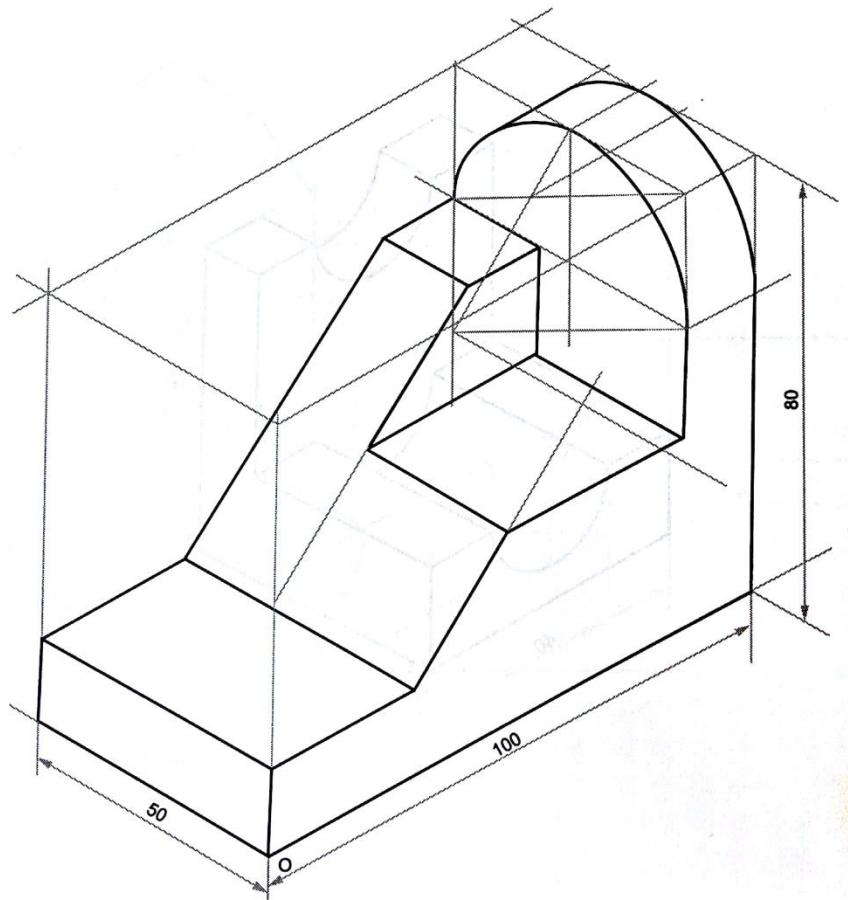
Solution:



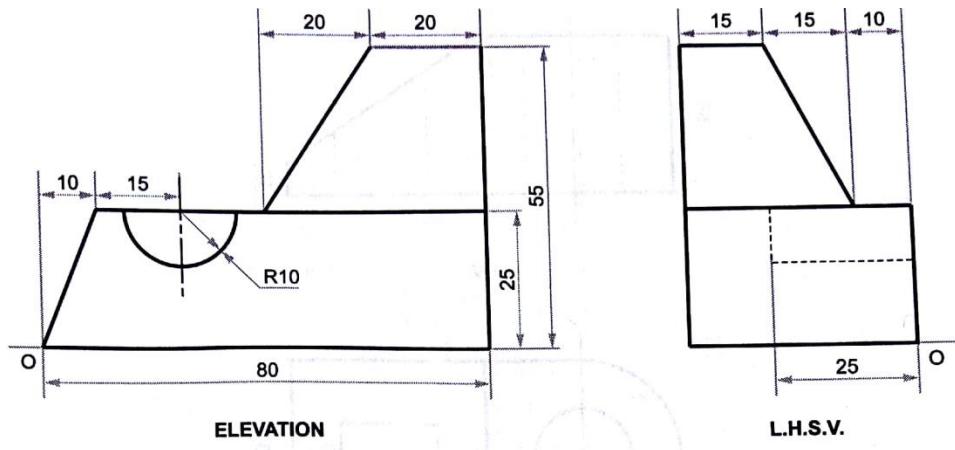
Problem 11: Draw isometric view from following orthographic views.



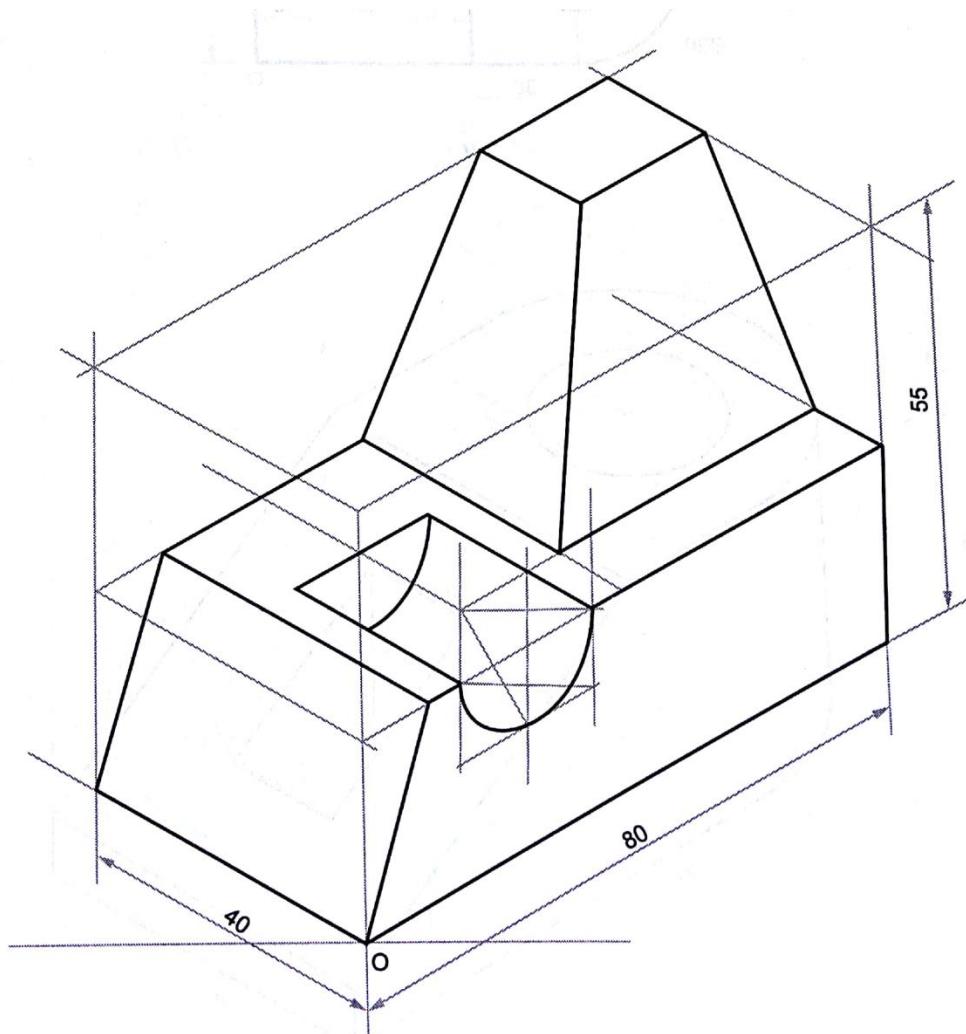
Solution:



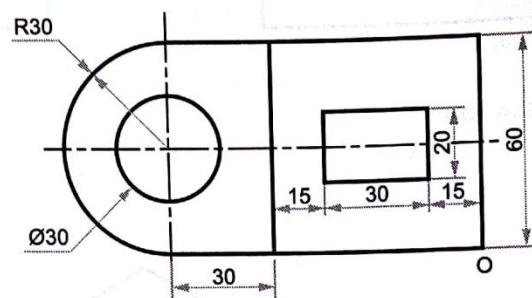
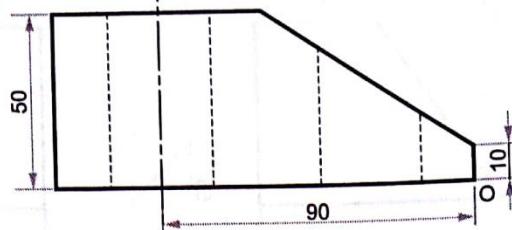
Problem 12: Draw isometric view from following orthographic views.



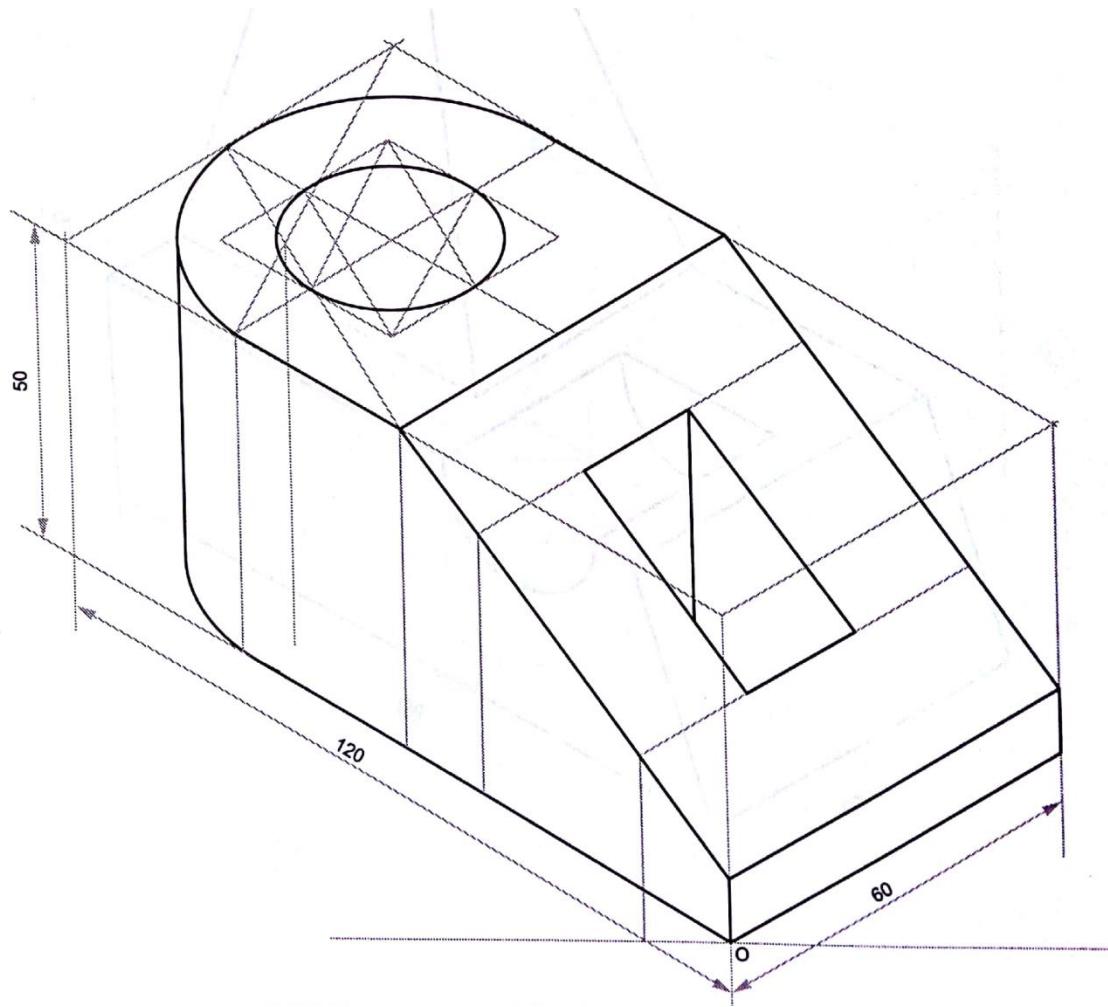
Solution:



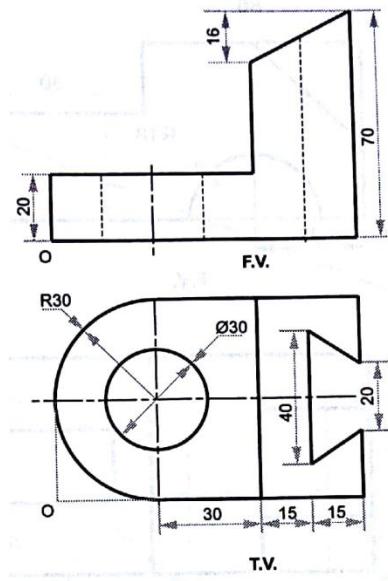
Problem 13: Draw isometric view from following orthographic views.



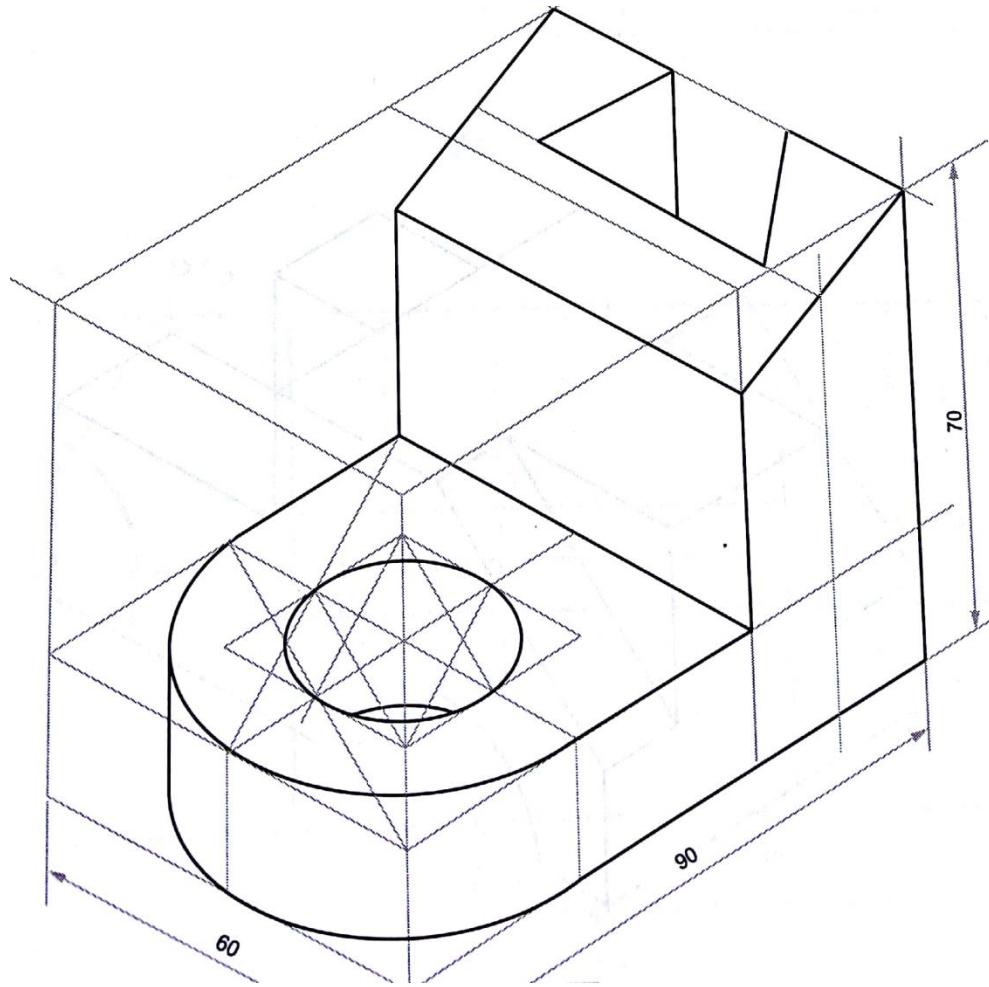
Solution:



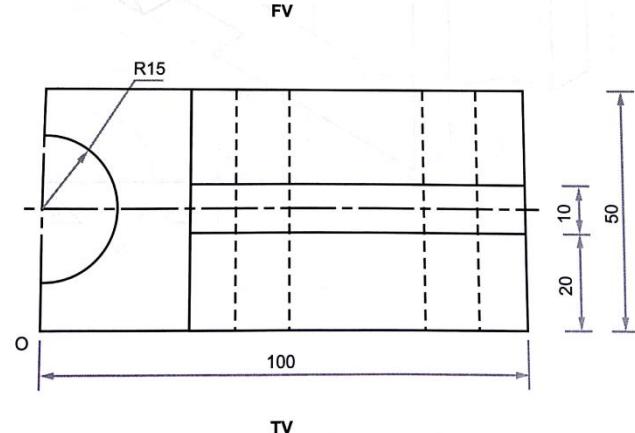
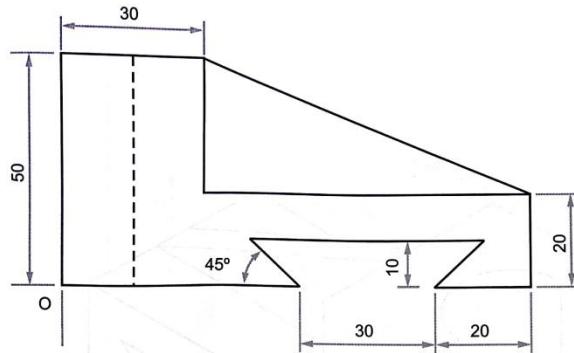
Problem 14: Draw isometric view from following orthographic views.



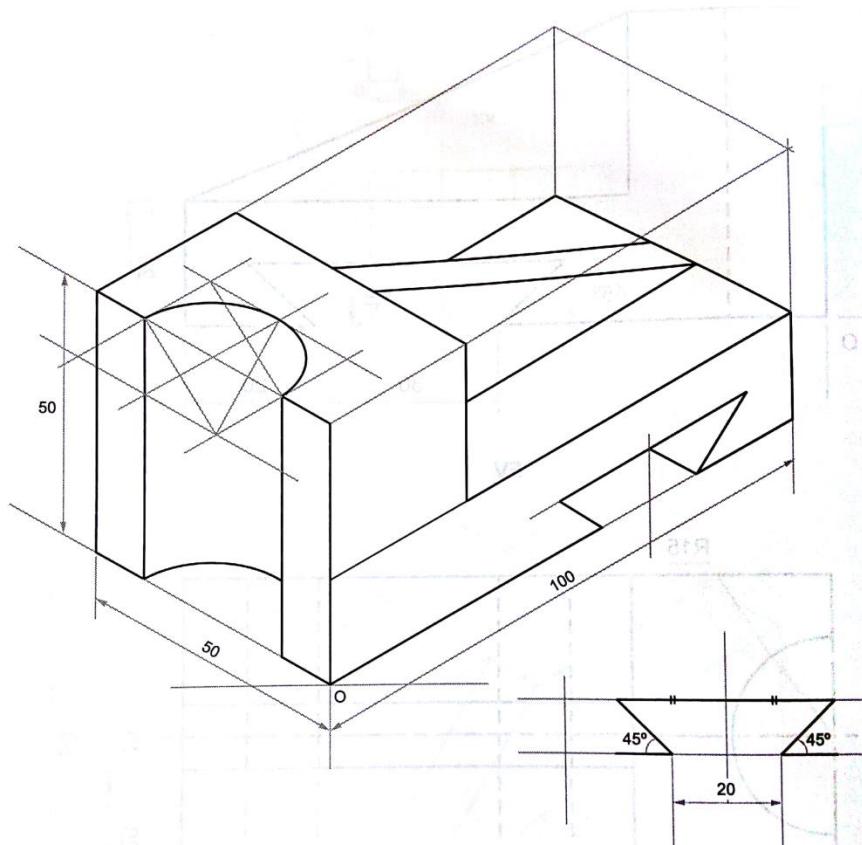
Solution:



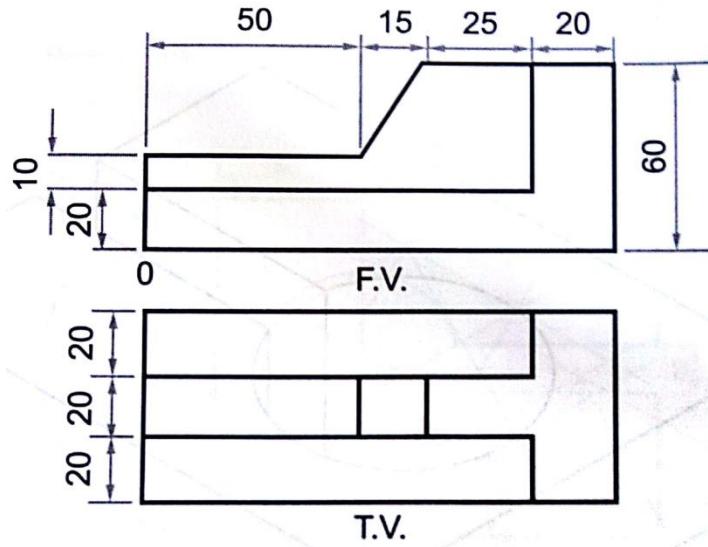
Problem 15: Draw isometric view from following orthographic views.



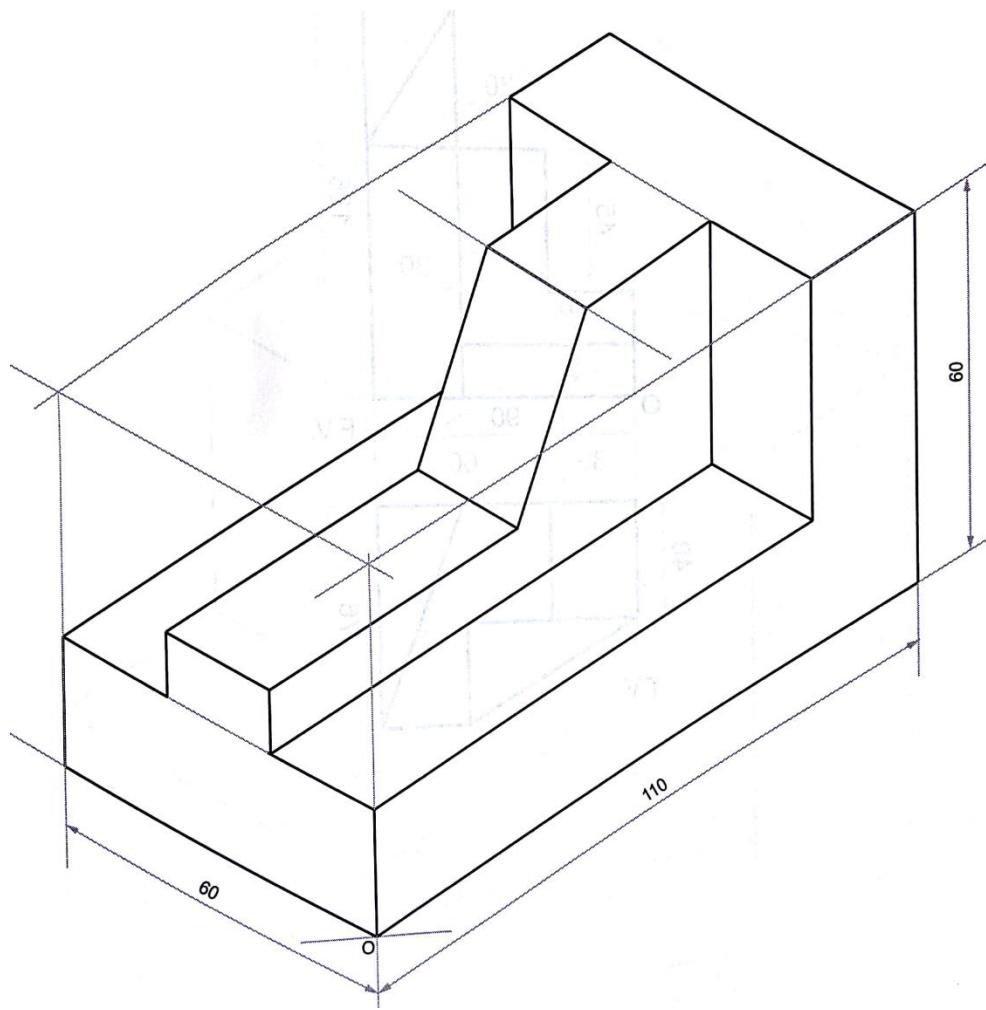
Solution:



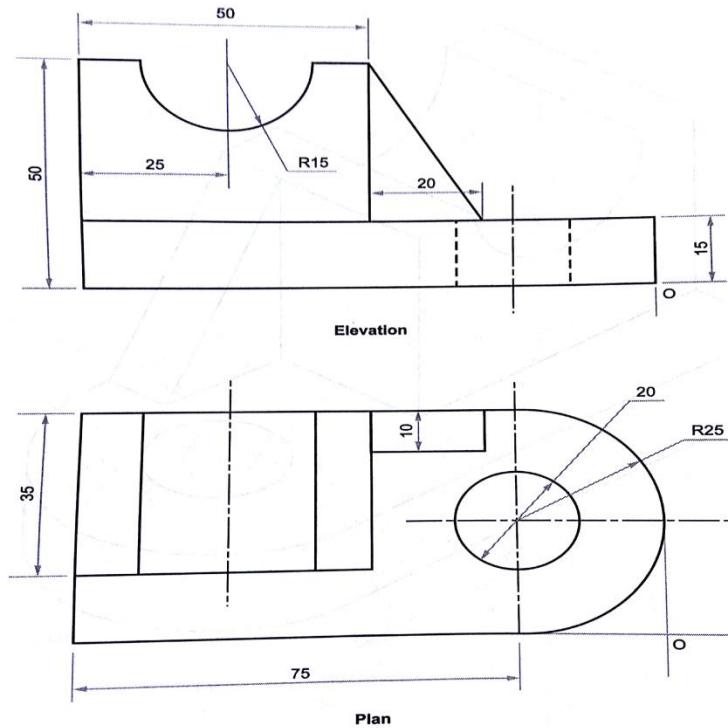
Problem 16: Draw isometric view from following orthographic views.



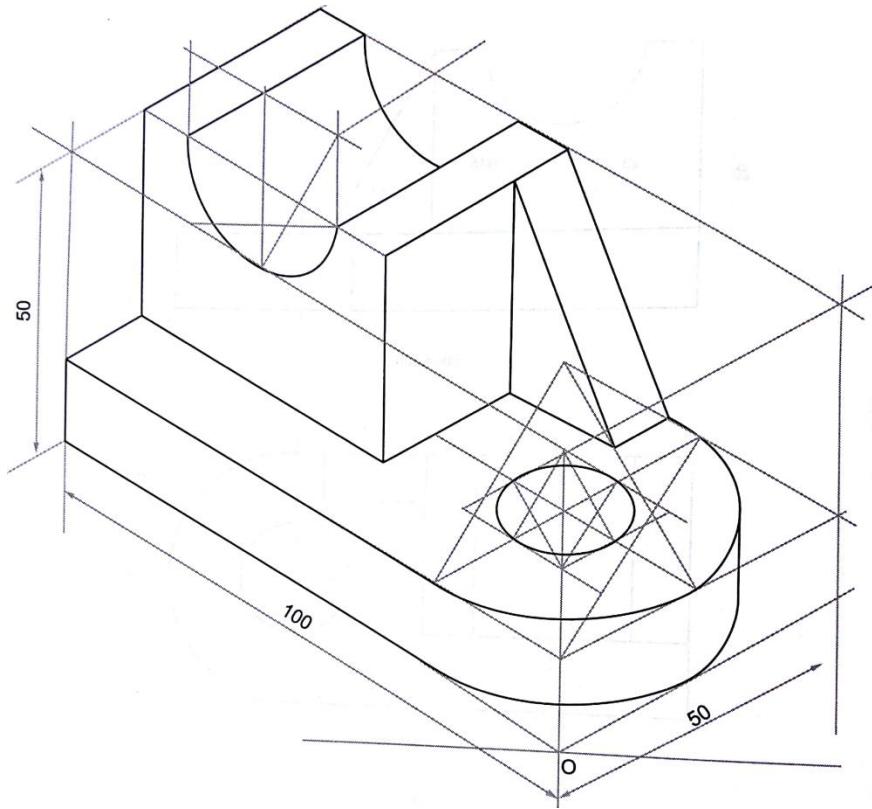
Solution:



Problem 17: Draw isometric view from following orthographic views.



Solution:

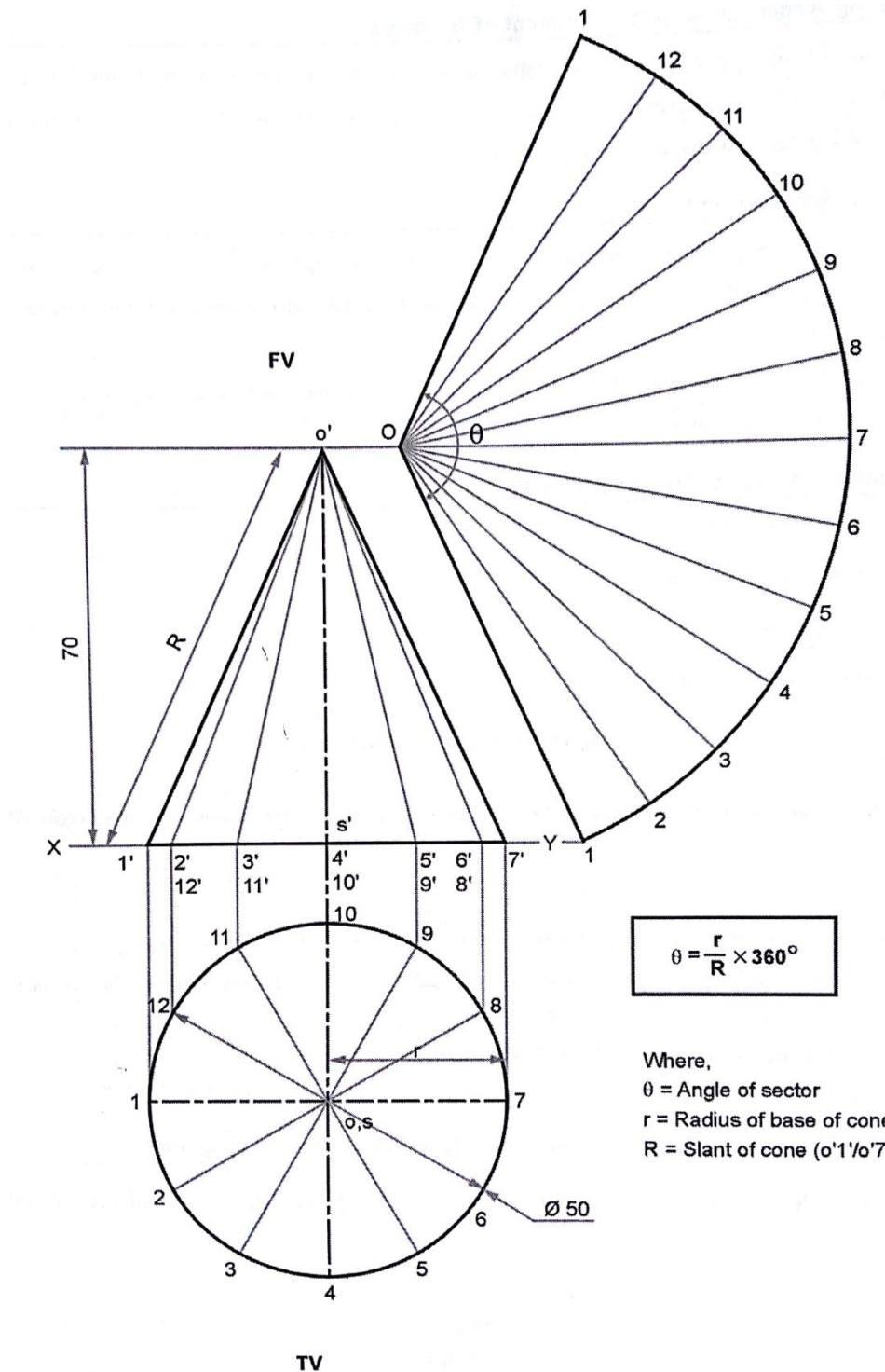


Question Bank

UNIT VI: DEVELOPMENT OF LATERAL SURAFACES

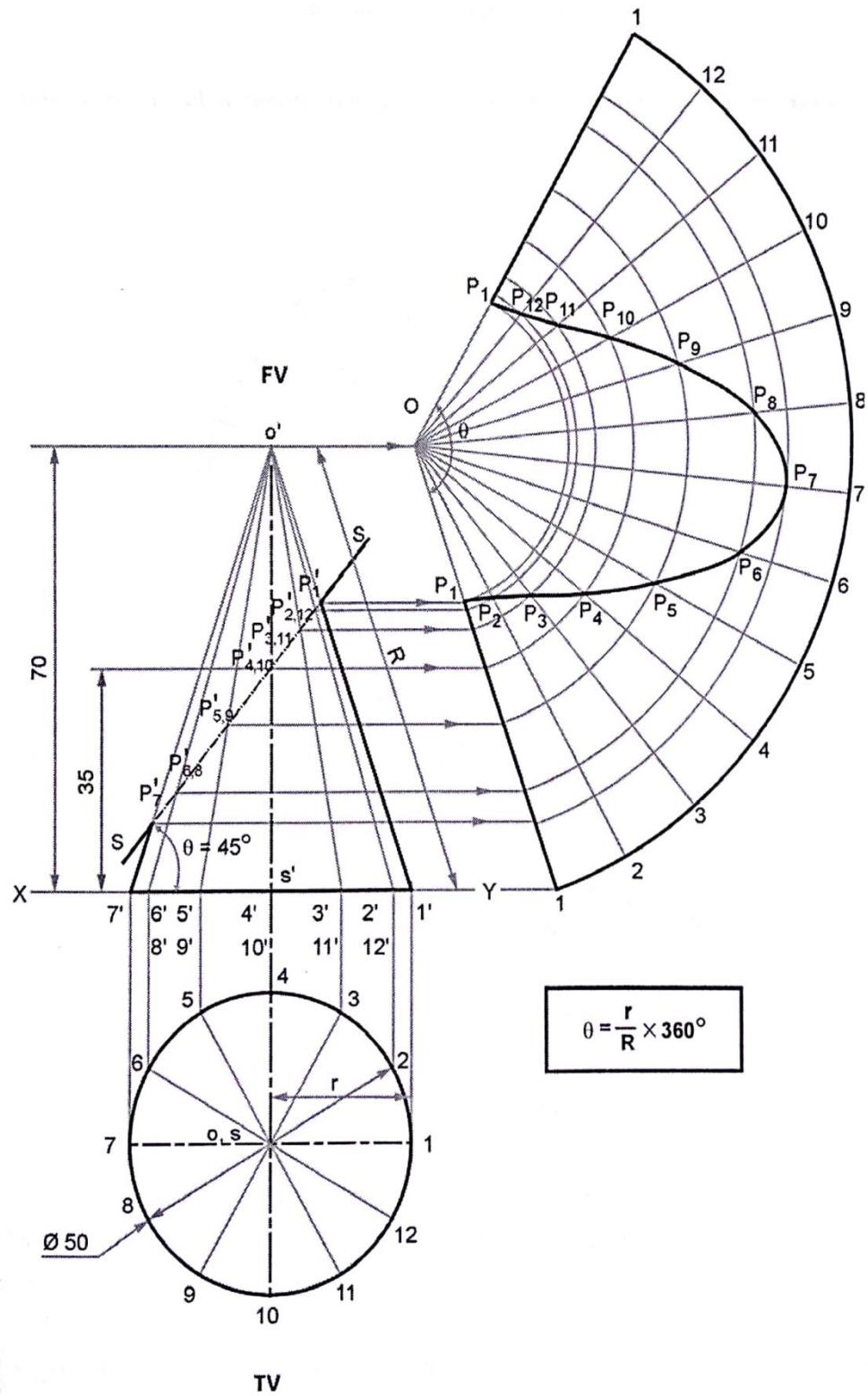
Problem 01: Draw the development of cone having base diameter 50 mm and axis height 70 mm.

Solution:



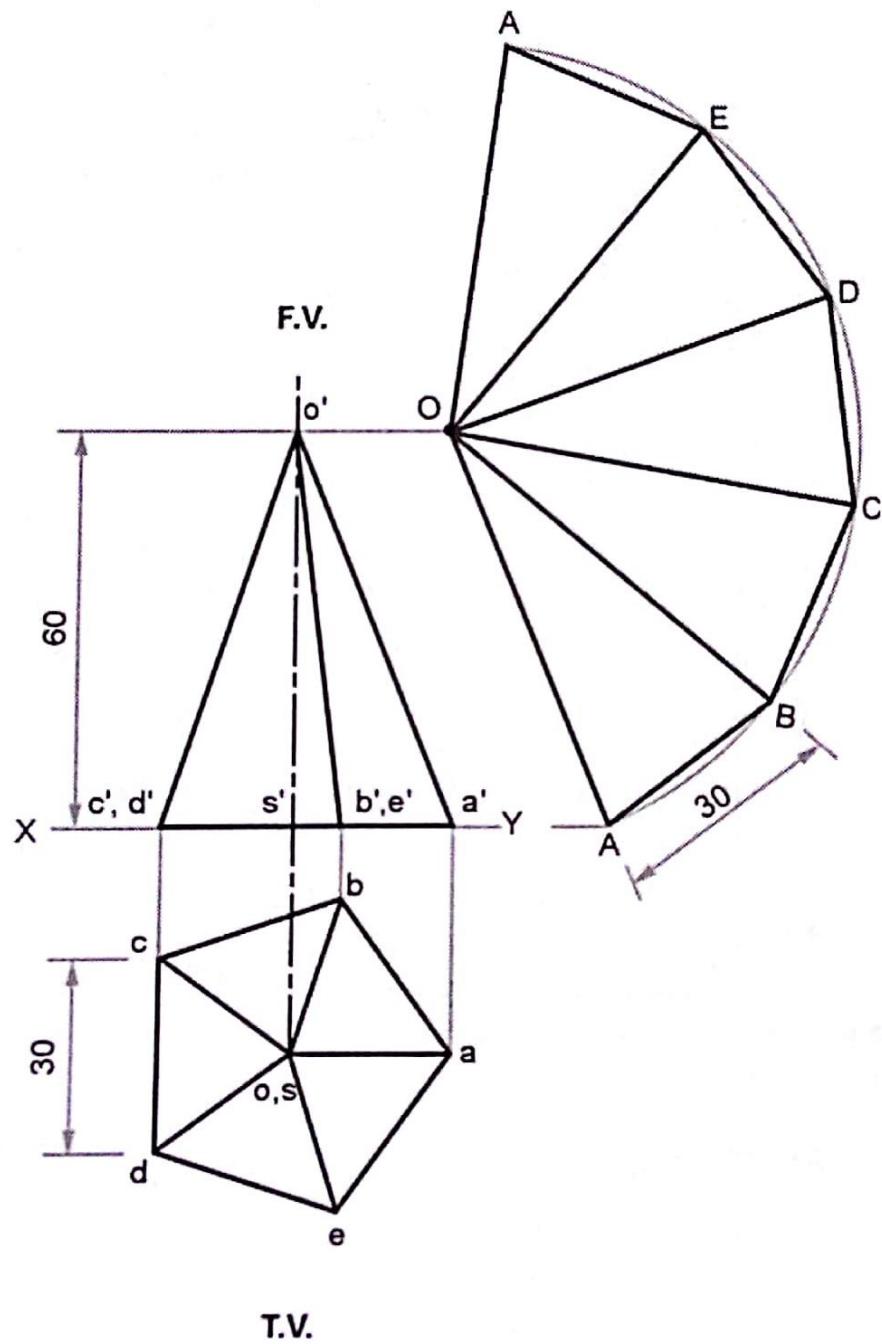
Problem 02: Draw the development of cone having base diameter 50 mm and axis height 70 mm. If its axis is cut by cutting plane which bisect the axis of the cone and inclined at 45^0 to H.P.

Solution:



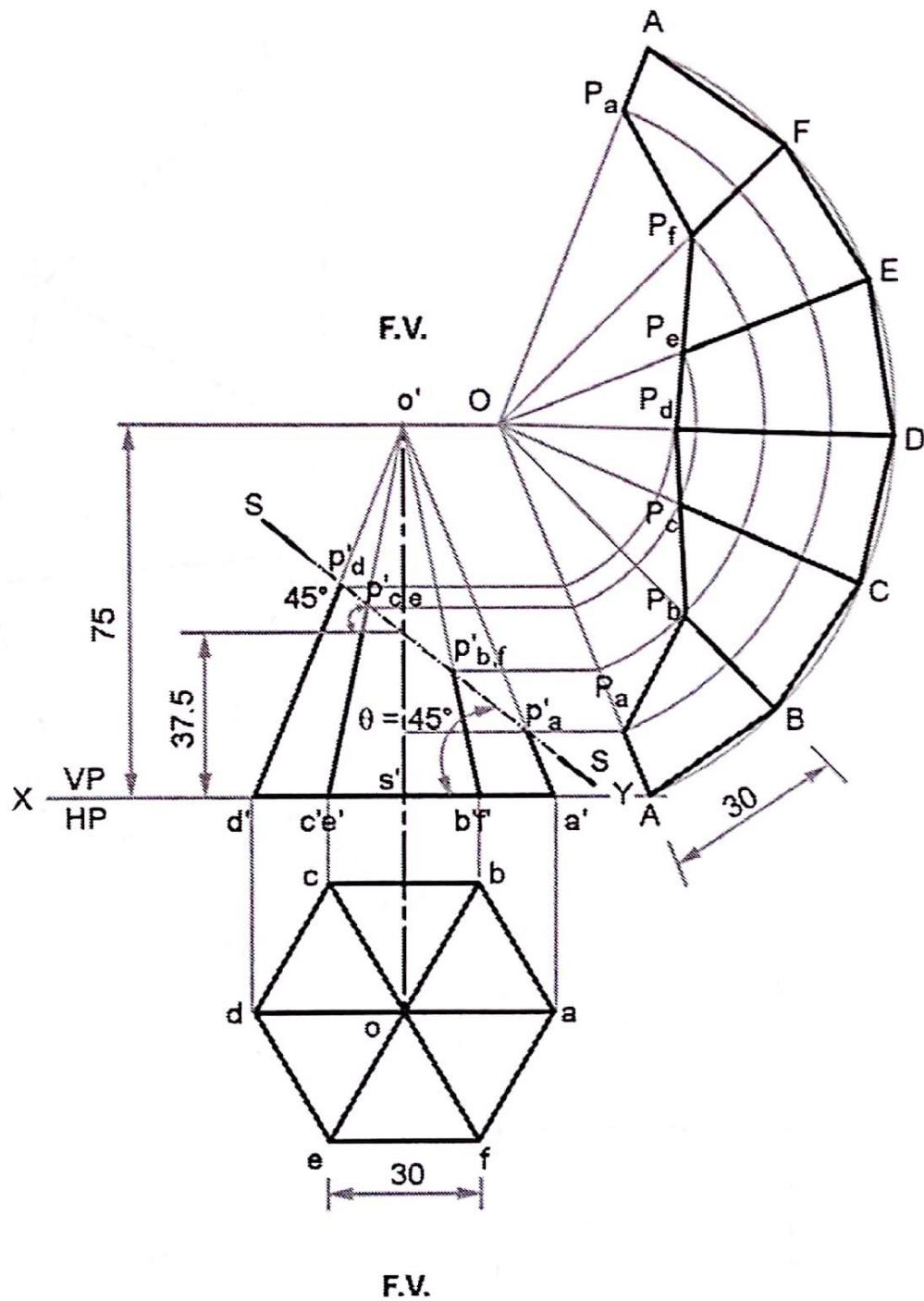
Problem 03: Draw the development of pentagonal pyramid having base side 30 mm & axis height 60 mm.

Solution:



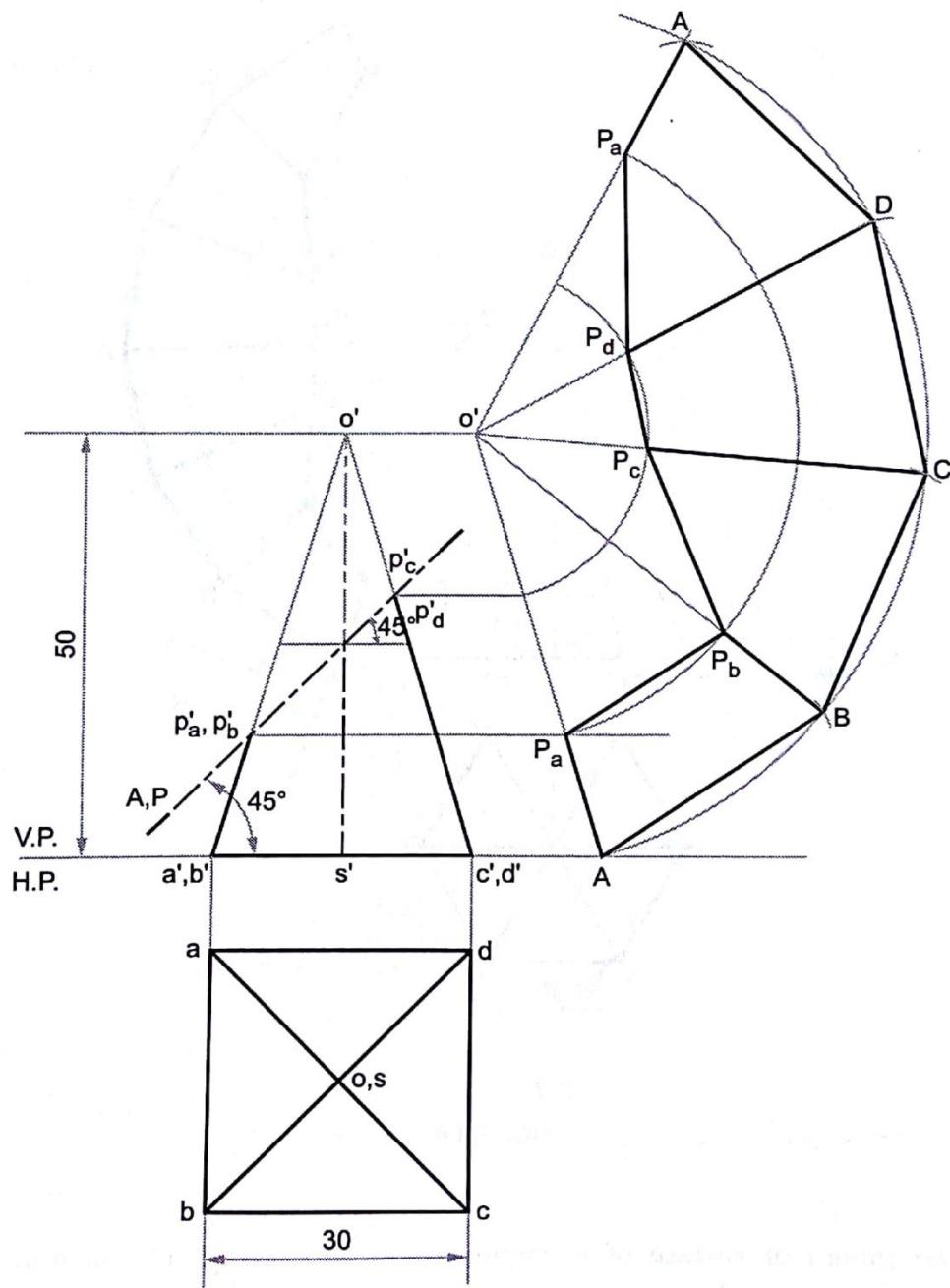
Problem 04: A hexagonal pyramid having base side 30 mm and axis height 75 mm is resting on H.P. with side of base parallel to V. P. It is cut by sectional Plane perpendicular to V. P. & inclined to H.P. at 45^0 and bisecting the axis. Draw its development.

Solution:



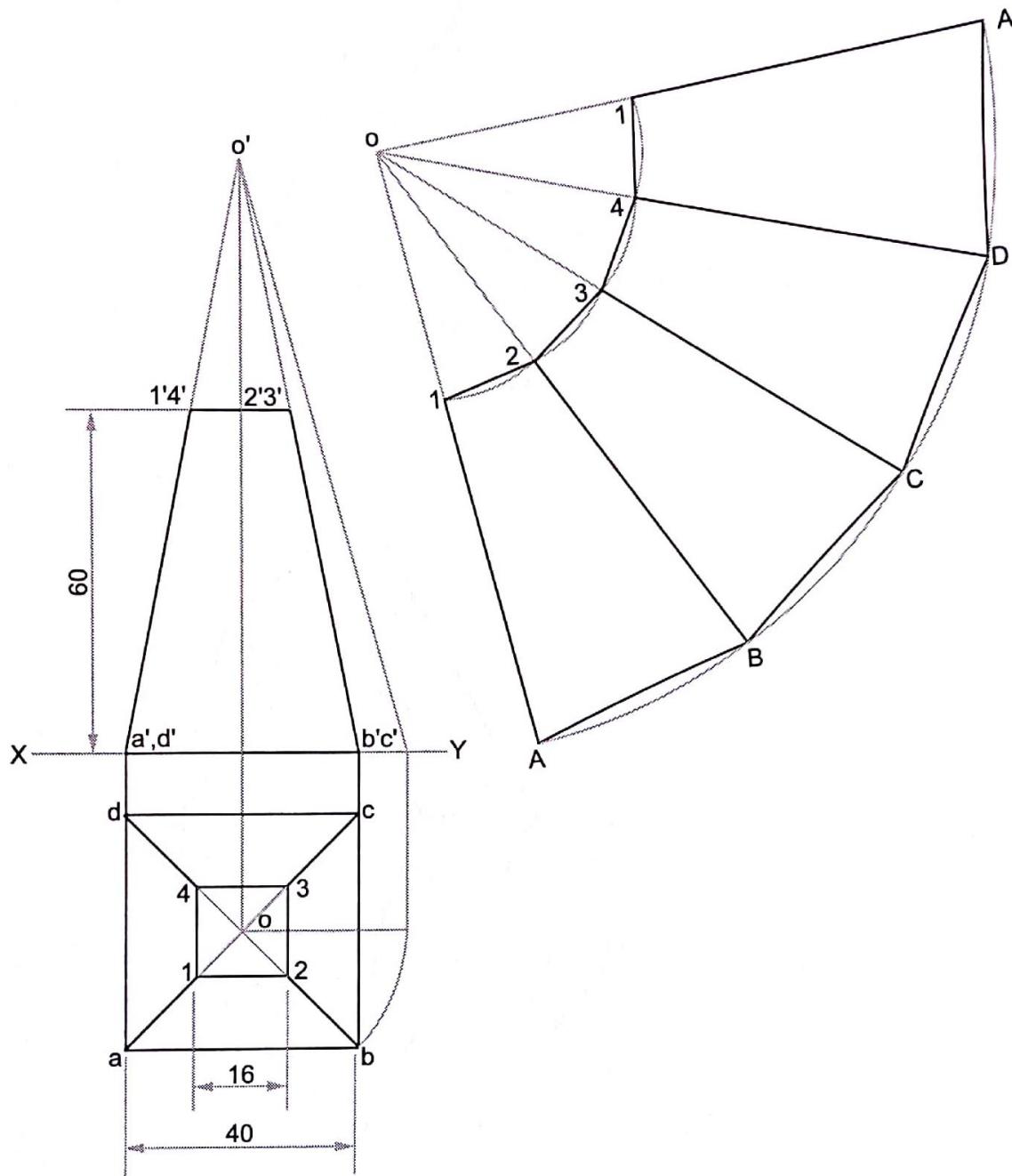
Problem 05: A square pyramid with side of base 30 mm and axis 50 mm long, is resting on its base on H.P. with an edge of base parallel to V.P. It is cut by a section plane, perpendicular to V.P. and inclined at 45° to H.P. The sectional plane passing through the midpoint of the axis. Draw the development of the surface of the cut pyramid.

Solution:

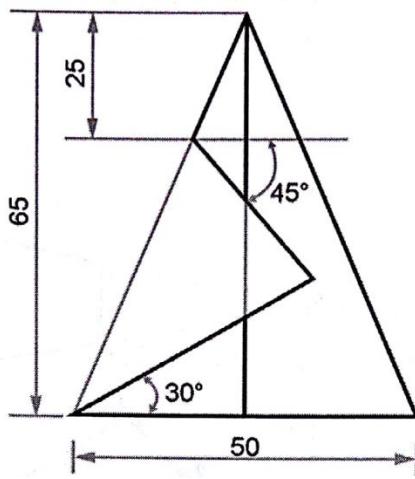


Problem 06: A frustum of square pyramid has its base 40 mm side, top 16 mm side and height 60 mm, its axis is vertical and side of base is parallel to vp. Draw the projection of frustum and show development of the lateral surfaces of it.

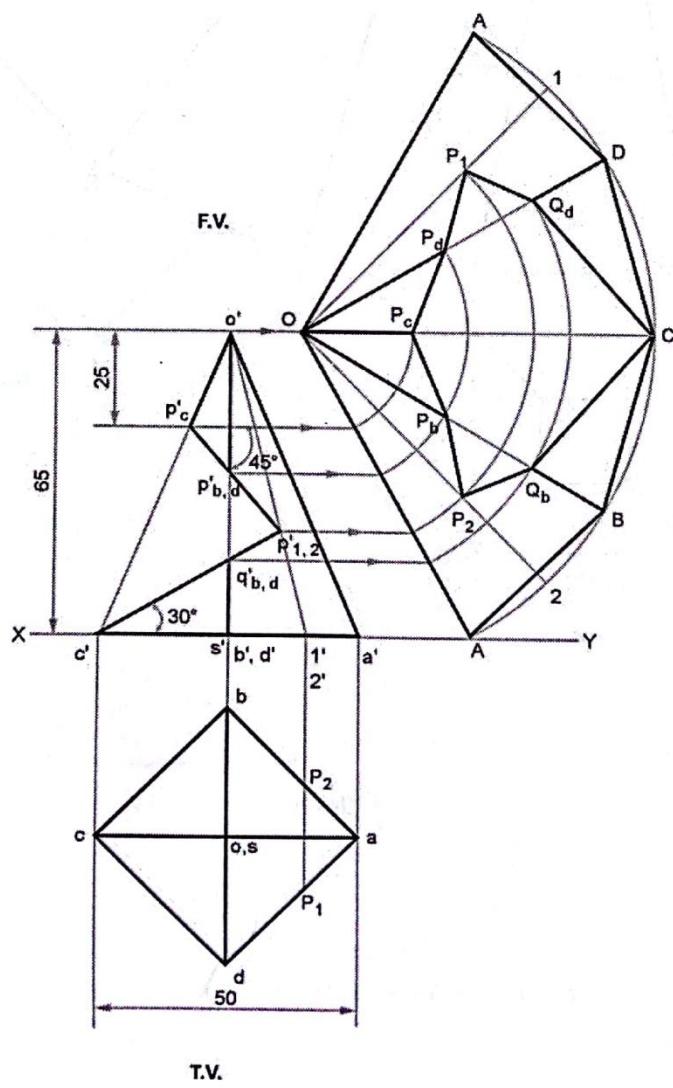
Solution:



Problem 10: Figure shows the development of square pyramid. Draw development of its lateral surfaces and its top view.

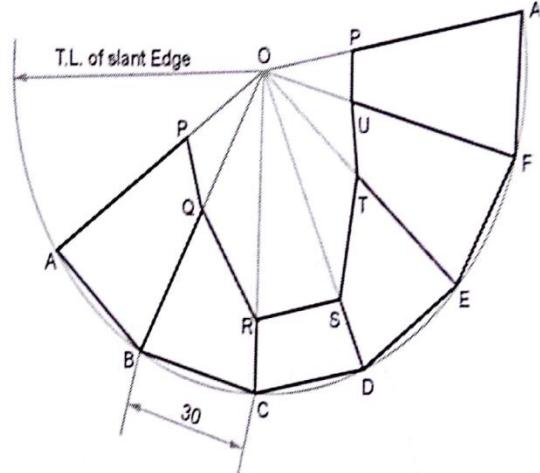
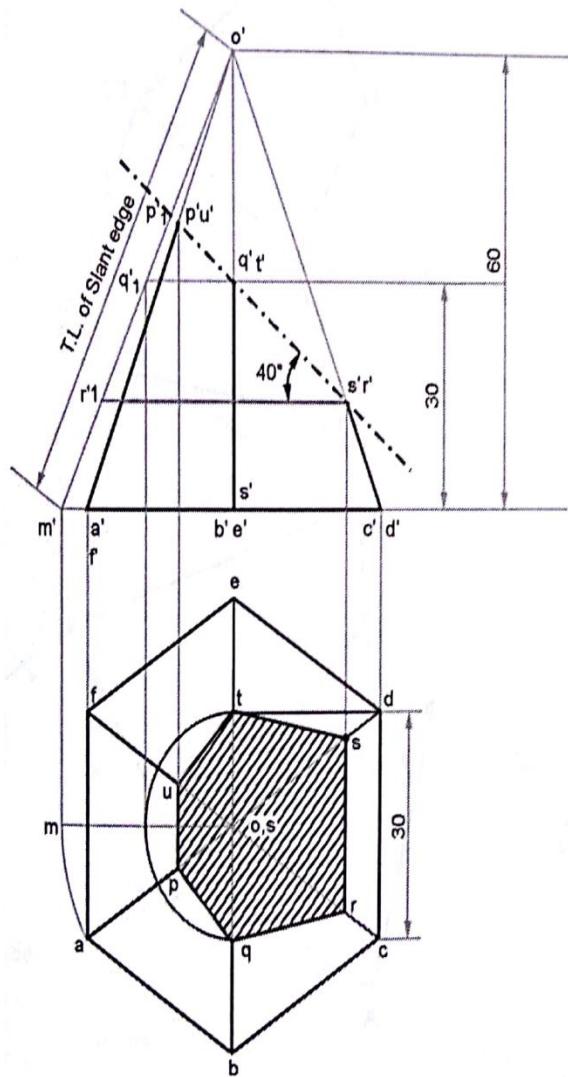


Solution:



Problem 11: A hexagonal pyramid of side of base 30 mm and height 60 mm is resting vertically on its base on HP such that two of the side of the base are perpendicular to VP. The cutting plane bisects the axis of the pyramid. Obtain the development of the lateral surface of the truncated pyramid.

Solution:

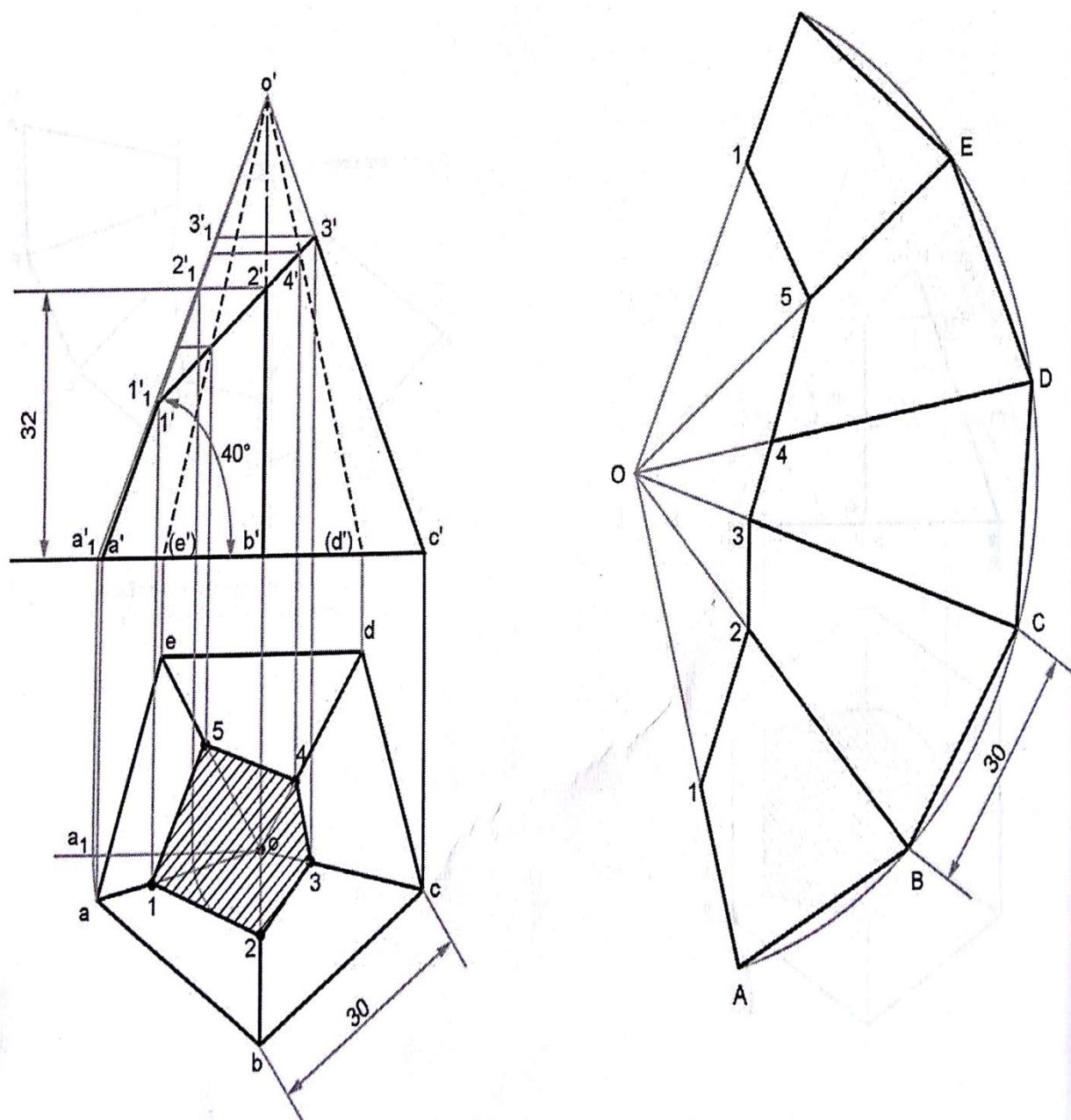


$$OA = o'm' = \text{True Length of Slant Edge}$$

$$OP = o'p', OQ = o'q', OR = o'r_1$$

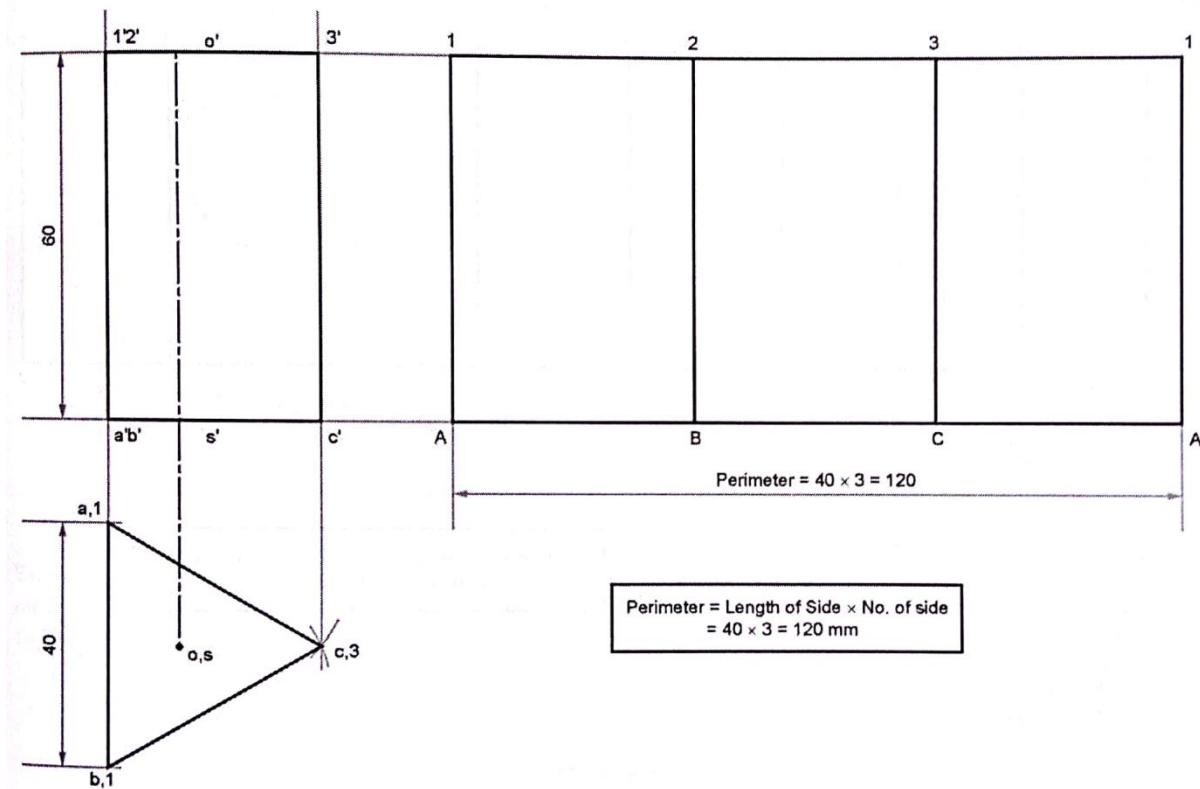
Problem 12: A pentagonal pyramid, side of base 30 mm and height 52 mm, stand with its base on HP and an edge of the base is parallel to VP and nearer to it. IT is cut by a plane perpendicular to VP. Inclined at 40^0 to HP and passing through a point on the axis, 32 mm above the base. Draw the sectional Top View. Develop the lateral surface of the truncated pyramid.

Solution:



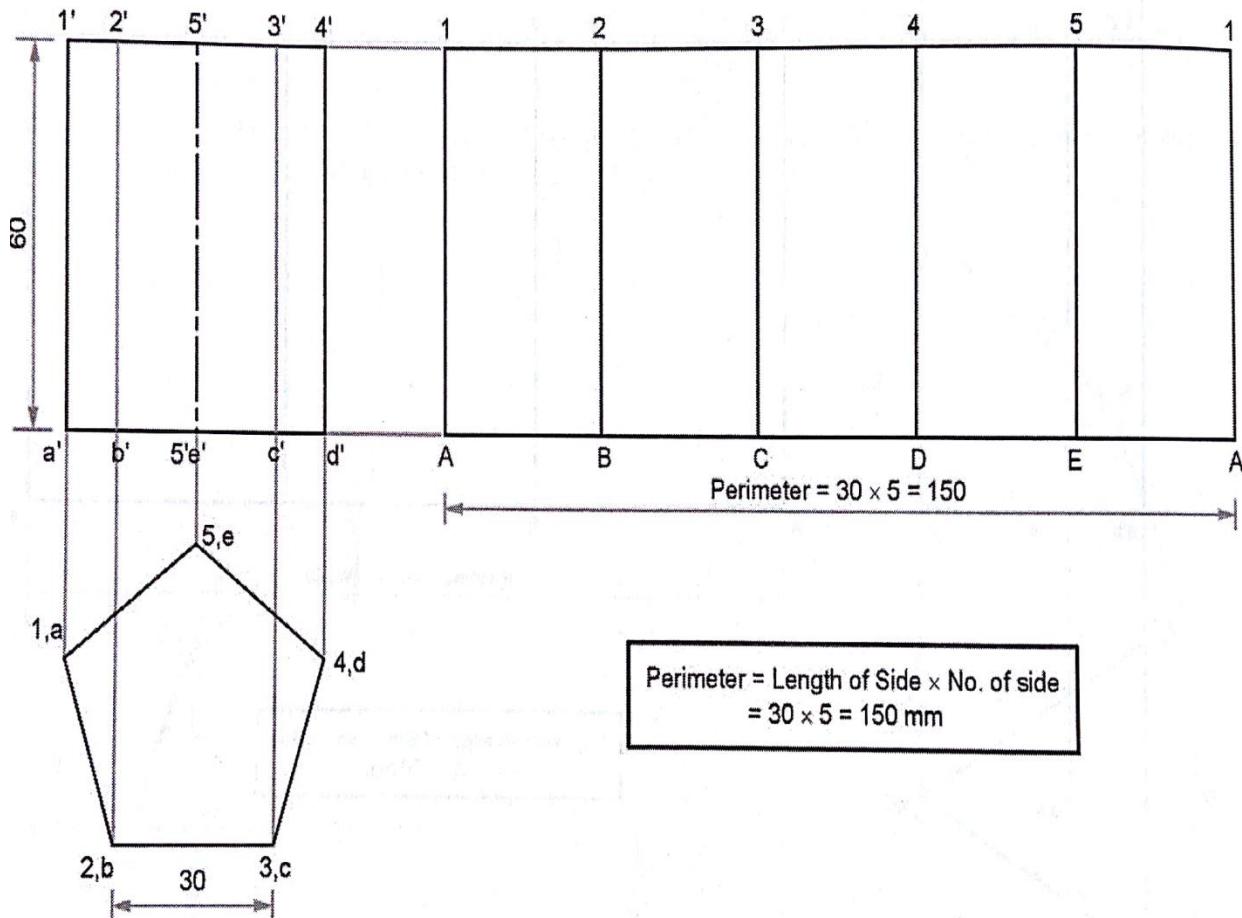
Problem 13: Draw the development of lateral surfaces of triangular prism of base side 40 mm and axis height 60 mm.

Solution:



Problem 14: A pentagonal prism side of base 30 mm and axis 60 mm has its base side parallel to VP and nearer to observer. Draw development of lateral surfaces.

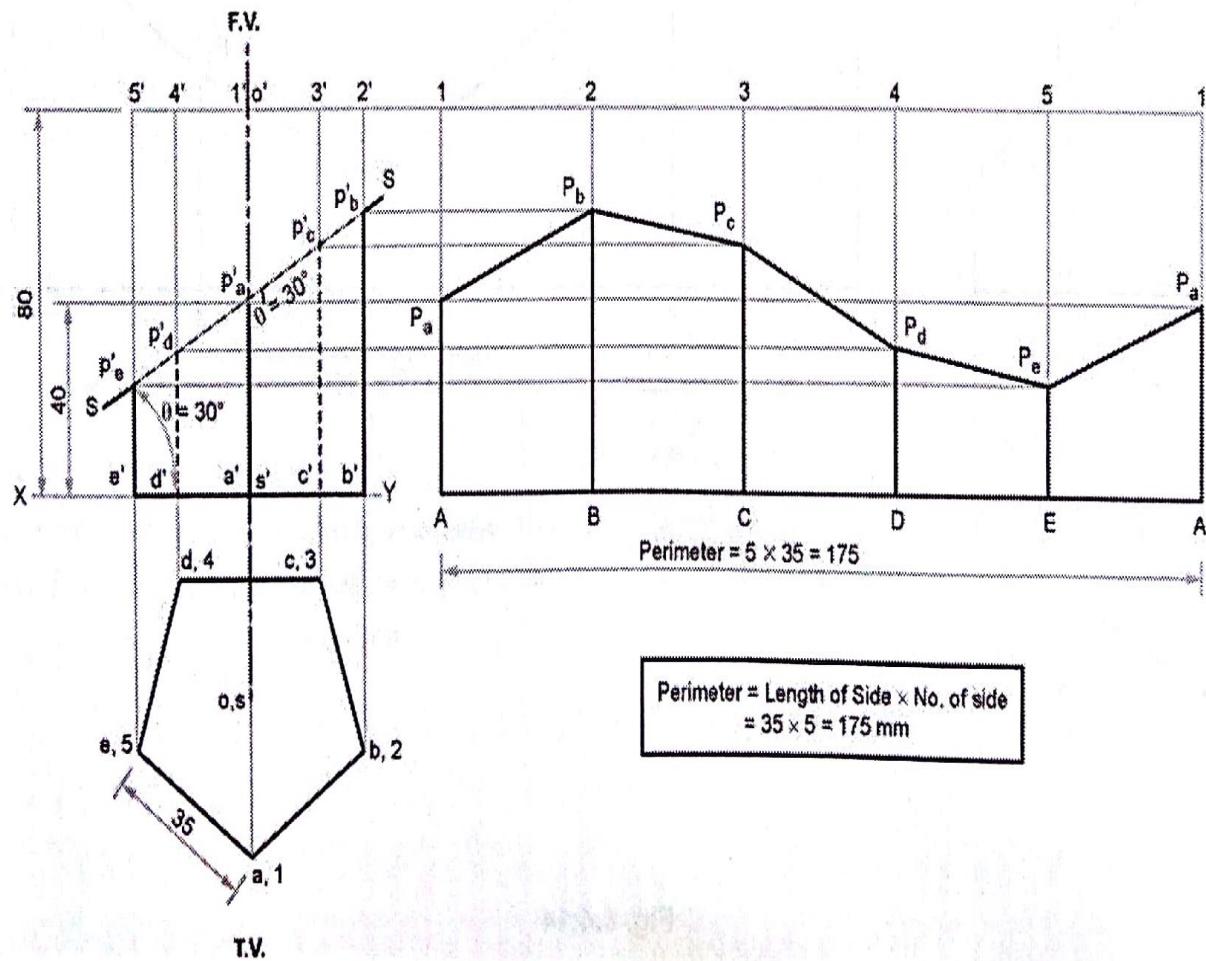
Solution:



Problem 15:

Draw the development of surface of pentagonal prism having side 35 mm and axis height 80 mm, rest on H.P. on its base with an edge of base parallel to V.P. when it is cut by a cutting plane which is inclined at 30° to the HP and bisecting the axis of prism.

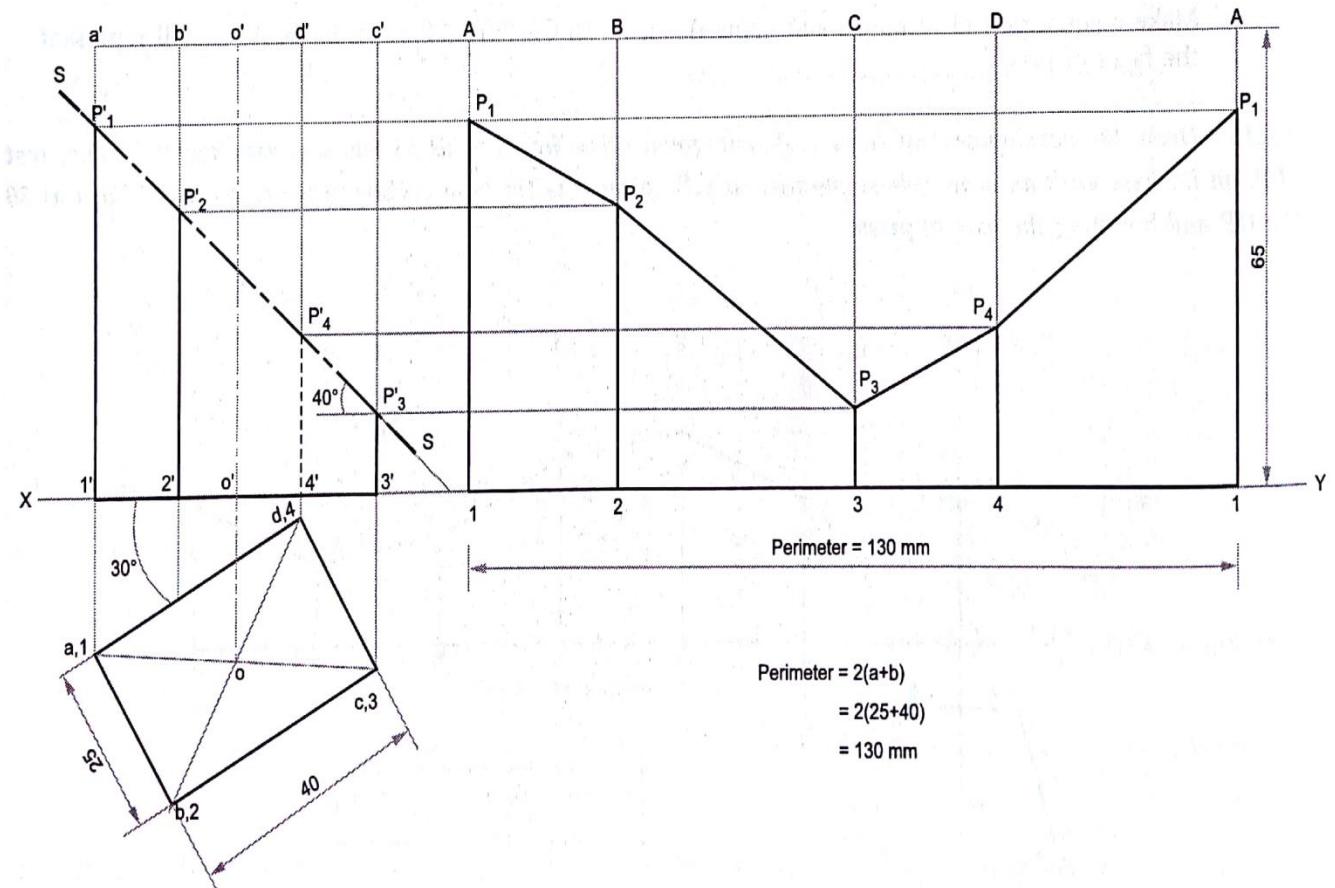
Solution:



Problem 16:

A rectangular prism of base $40 \text{ mm} \times 25 \text{ mm}$ and height 65 mm rests on HP on its base with the longer side of base inclined at 30° to VP. It is cut by a plane inclined at 40° to HP, perpendicular to VP cuts the axis at its mid height. Draw the development of the remaining portion of the prism.

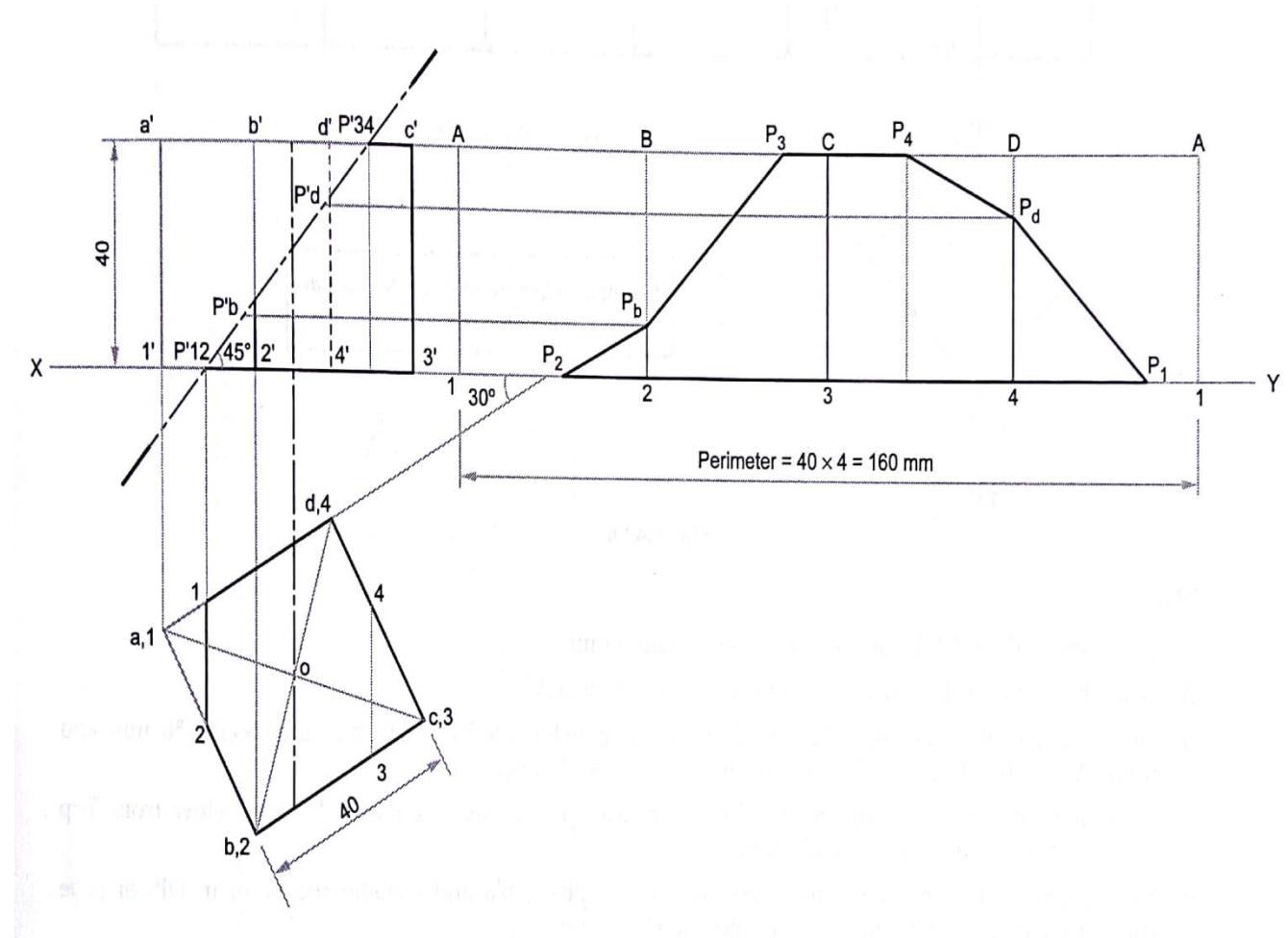
Solution:



Problem 17:

A cube of side 40 mm is resting on HP with its base on HP such that one of its vertical faces is inclined at 30° to the VP. It is cut by a section plane perpendicular to VP, inclined to HP at an angle 45° and passes through the midpoint of the axis. Draw the development of the lower lateral surface of the cube.

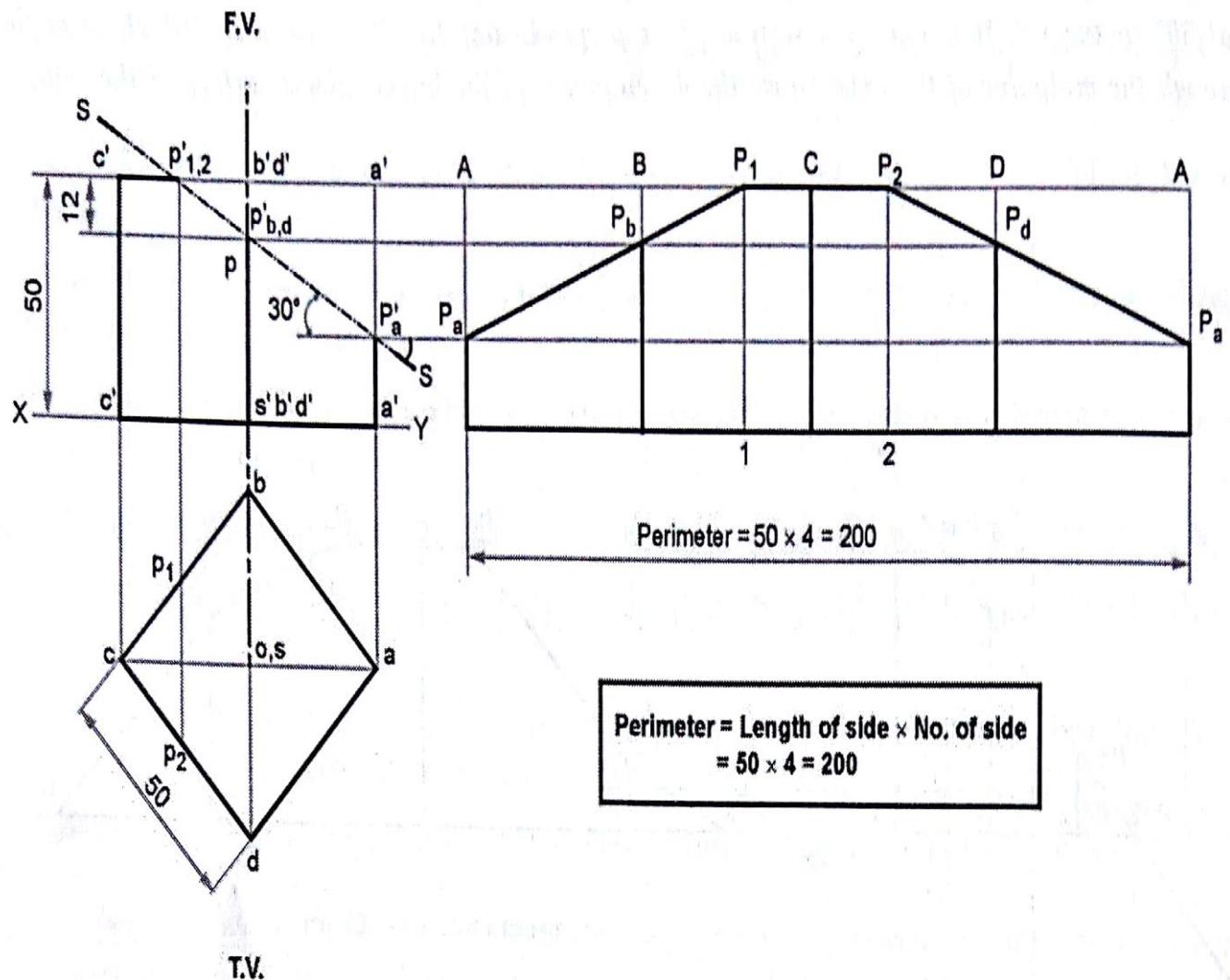
Solution:



Problem 18:

A cube of 50 mm edges, its resting on a face on H.P. such that all the sides equally inclined to V.P. and it is cut by a section plane perpendicular to V.P. and inclined at 30° to H.P., also passes through a axial point 12 mm from Top side. Draw the development of cube.

Solution:



Problem 19:

Draw the development of surface of a cylinder having base diameter 50 mm and axis height 80 mm. Kept on H.P. it is cut by a cutting plane which is inclined at 45° with H.P. and bisecting the axis of cylinder.

Solution:

