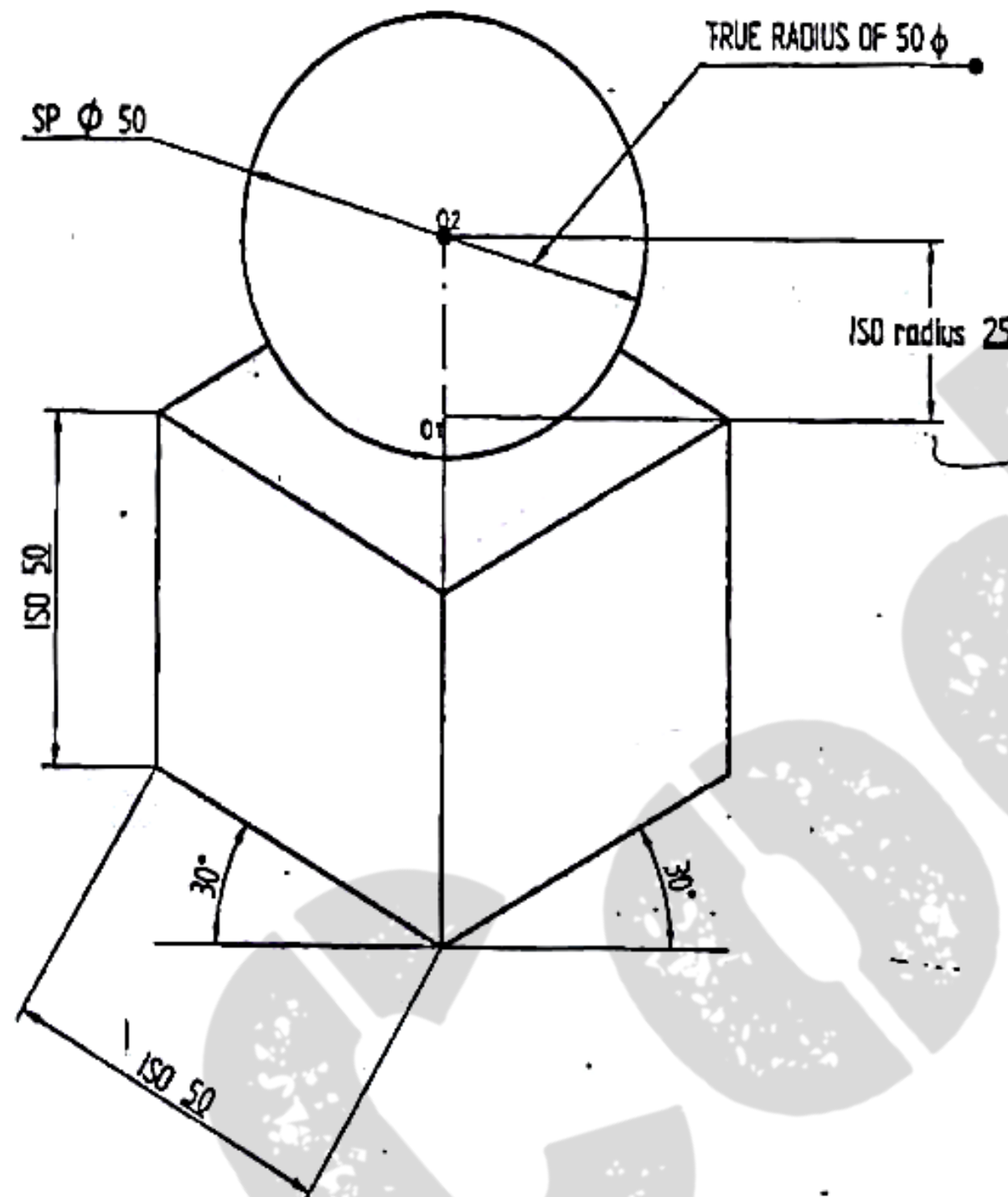


## CHAPTER 6

### ISOMETRIC PROJECTION

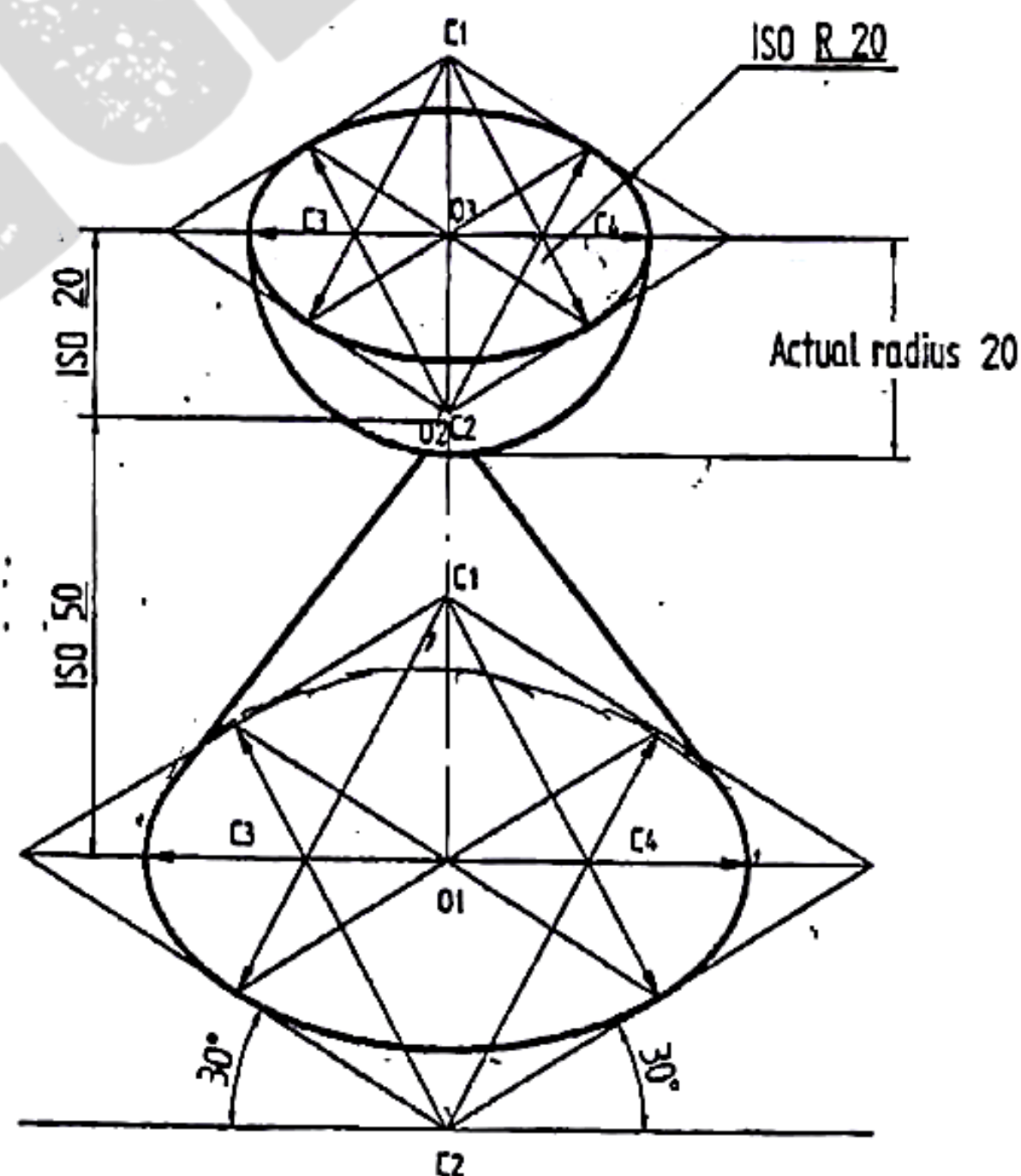
**Problem 1** A sphere of diameter 50 mm rests centrally on top of a cube of sides 50 mm. Draw the Isometric projections of the combination of solids.

**Solution**



**Problem 2** A hemisphere of 40 mm diameter is supported co-axially on the vertex of a cone of base dia. 60 mm and axis length 50 mm. The flat circular face of the hemisphere is facing upside. Draw the isometric projection of the combination of solids.

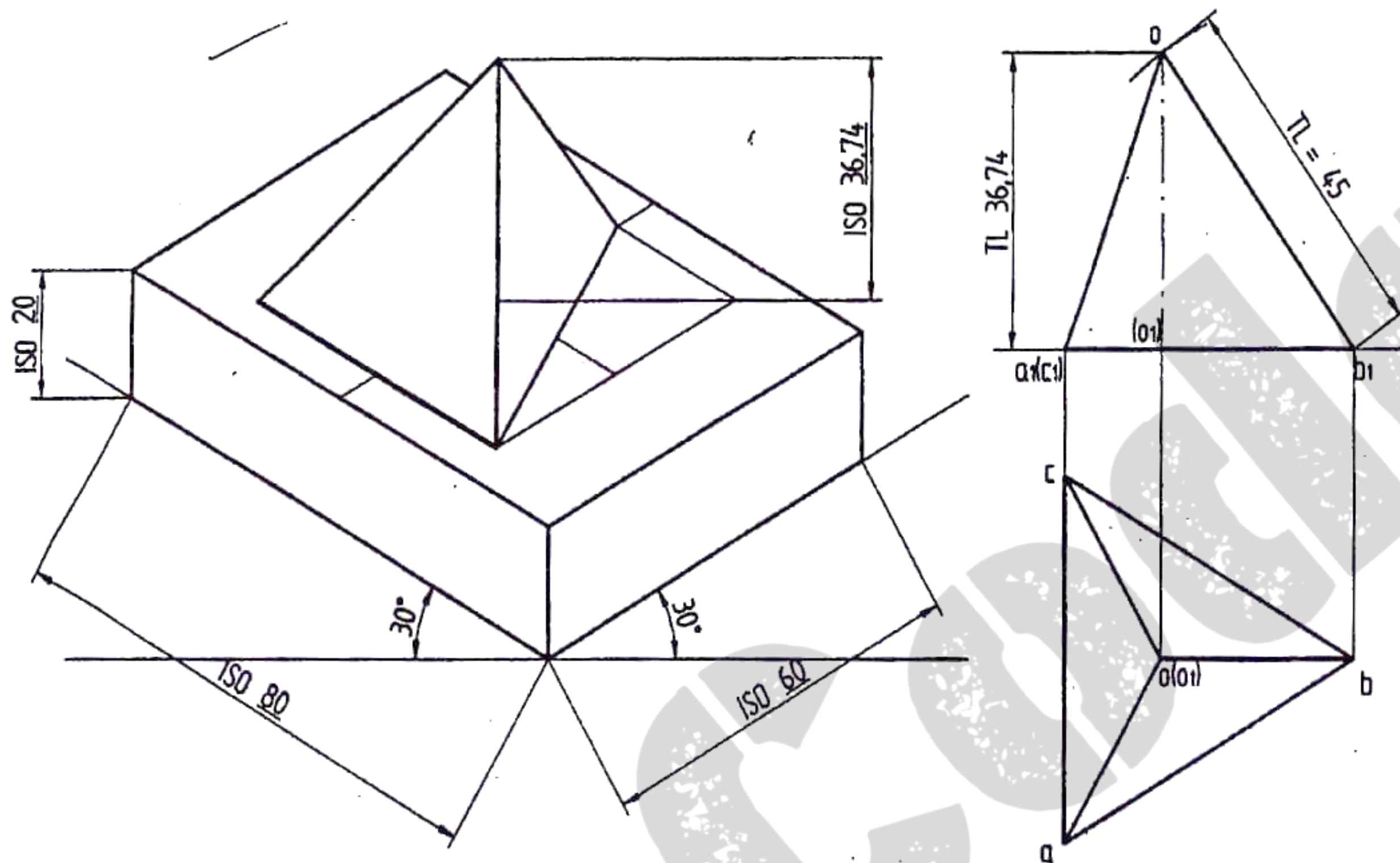
**Solution**





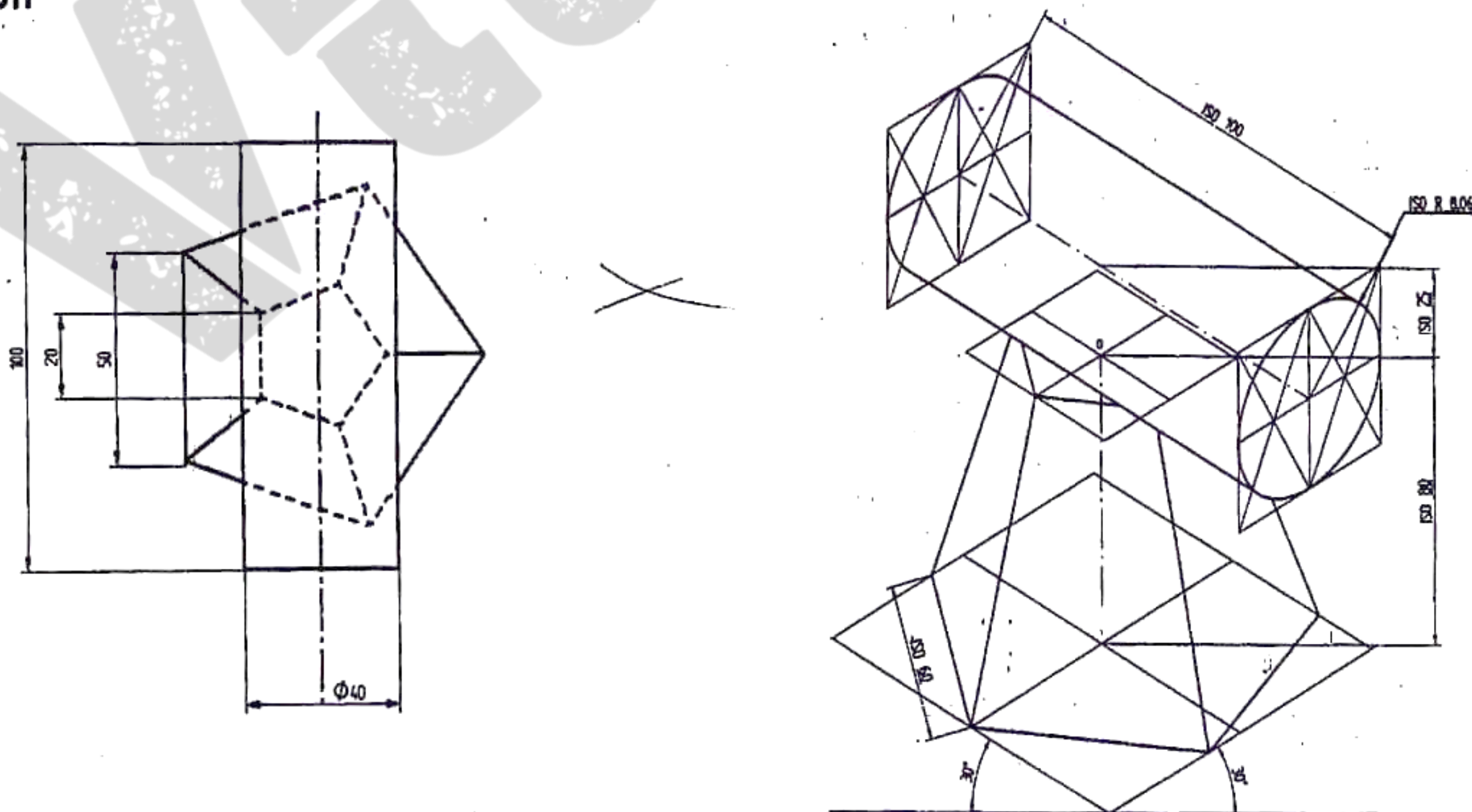
**Problem 3** Draw the Isometric projection of a rectangular prism of 60 x 80 x 20 mm thick surmounting a tetrahedron of sides 45 mm such that the axes of the solids are collinear and at least one of the edges of both the solids are parallel to VP. Solved examples 6.1 p140, 6.2 p143, 6.3 p146, 6.4 p150 and 6.5 p156 of primer

**Solution**



**Problem 4** Following figure shows the top view of a cylinder which is centrally mounted on a frustum of a pentagonal pyramid of 60 mm height. Draw the Isometric projection of the combination of solids.

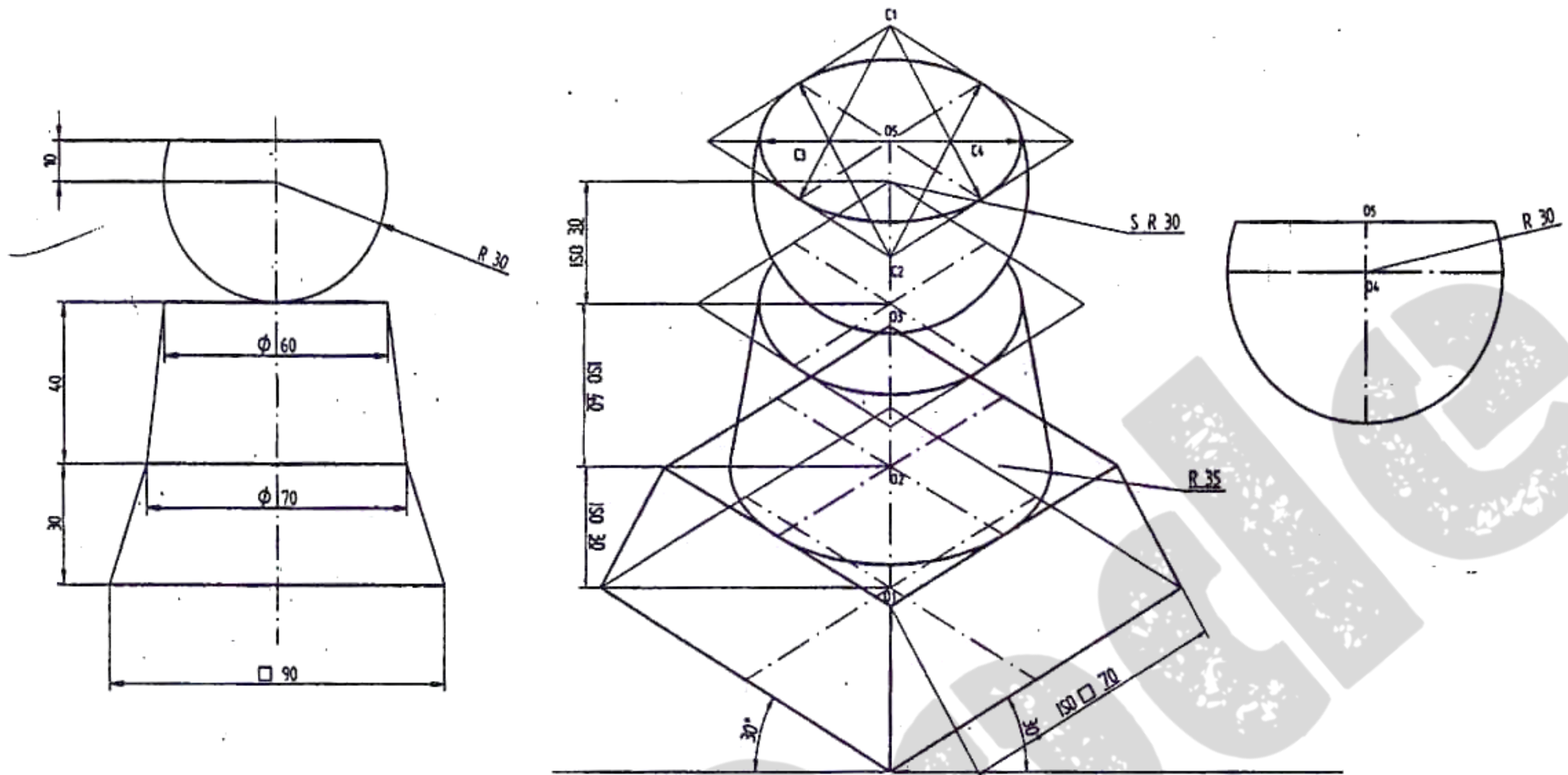
**Solution**





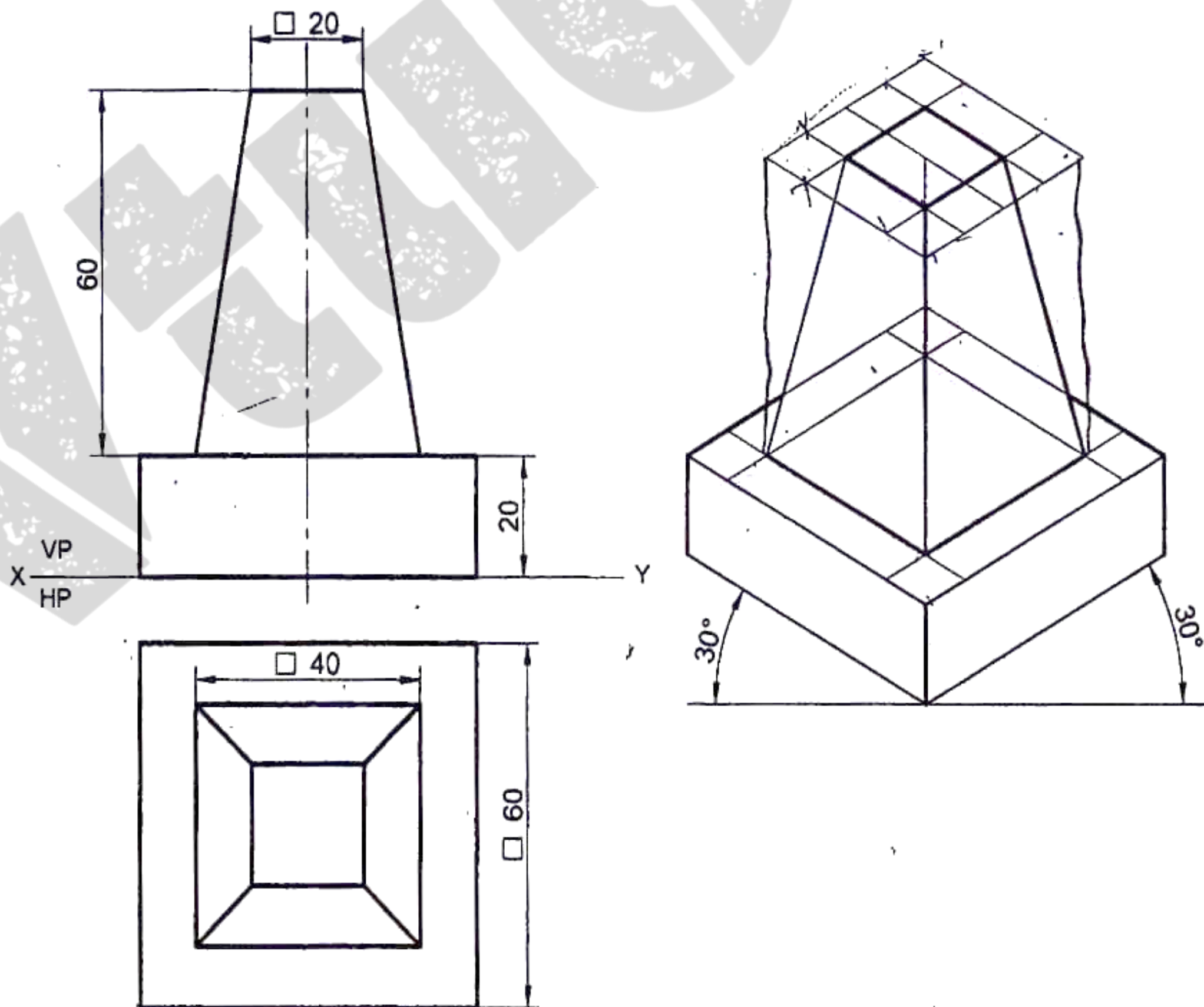
**Problem 5** Following figure shows the front view of combination of solids consisting a cut sphere and frustums of a cone and a square pyramid. Draw the Isometric projection of the combination of solids.

**Solution**



**Problem 6** The frustum of a square pyramid of sides 40mm and height 60mm rest on the centre of the top of a square block of side 60mm and height 20mm. The base edges of the pyramid are parallel to the top edges of the square block. Draw the isometric projection of the combination of the solids.

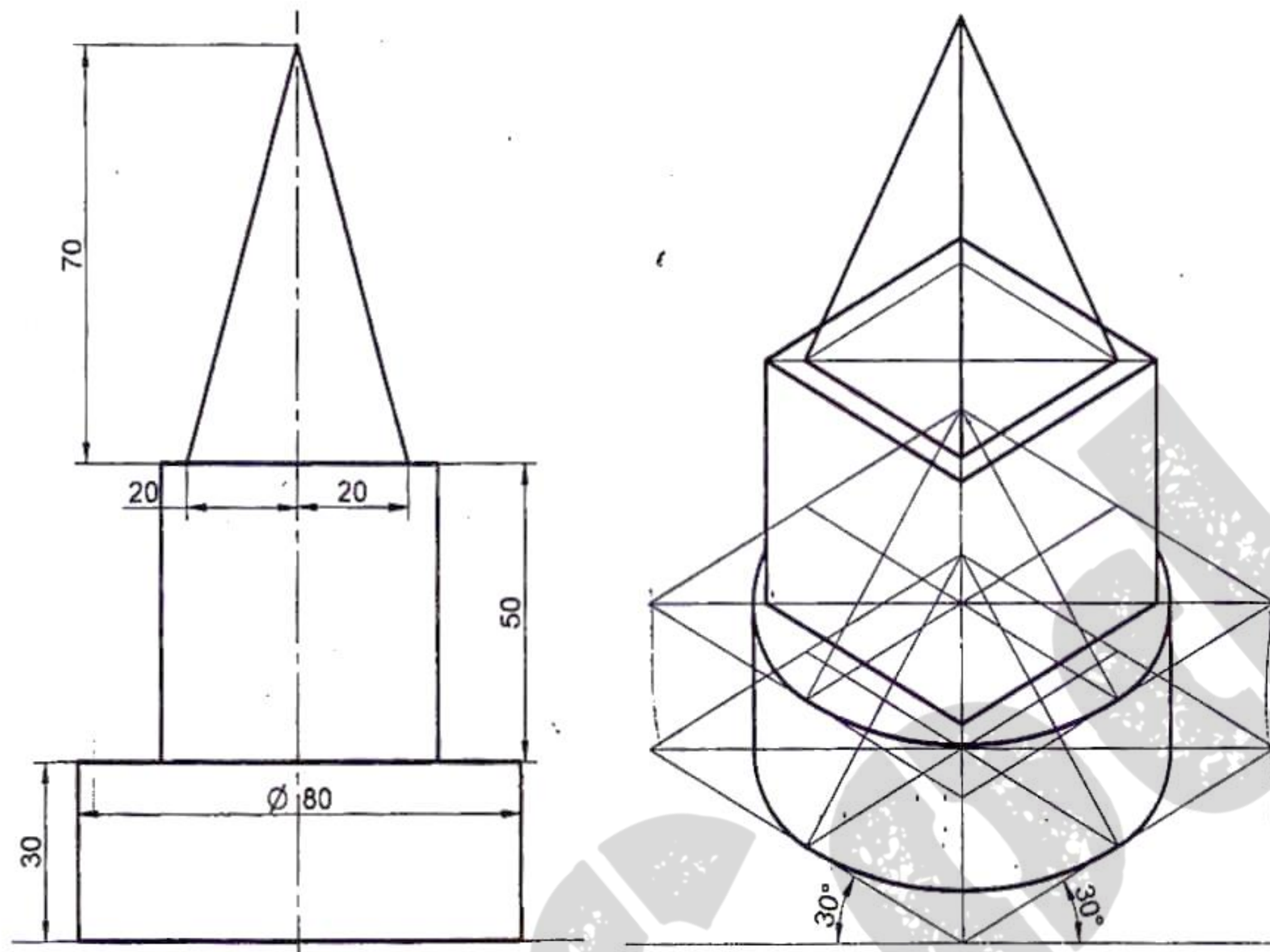
**Solution**





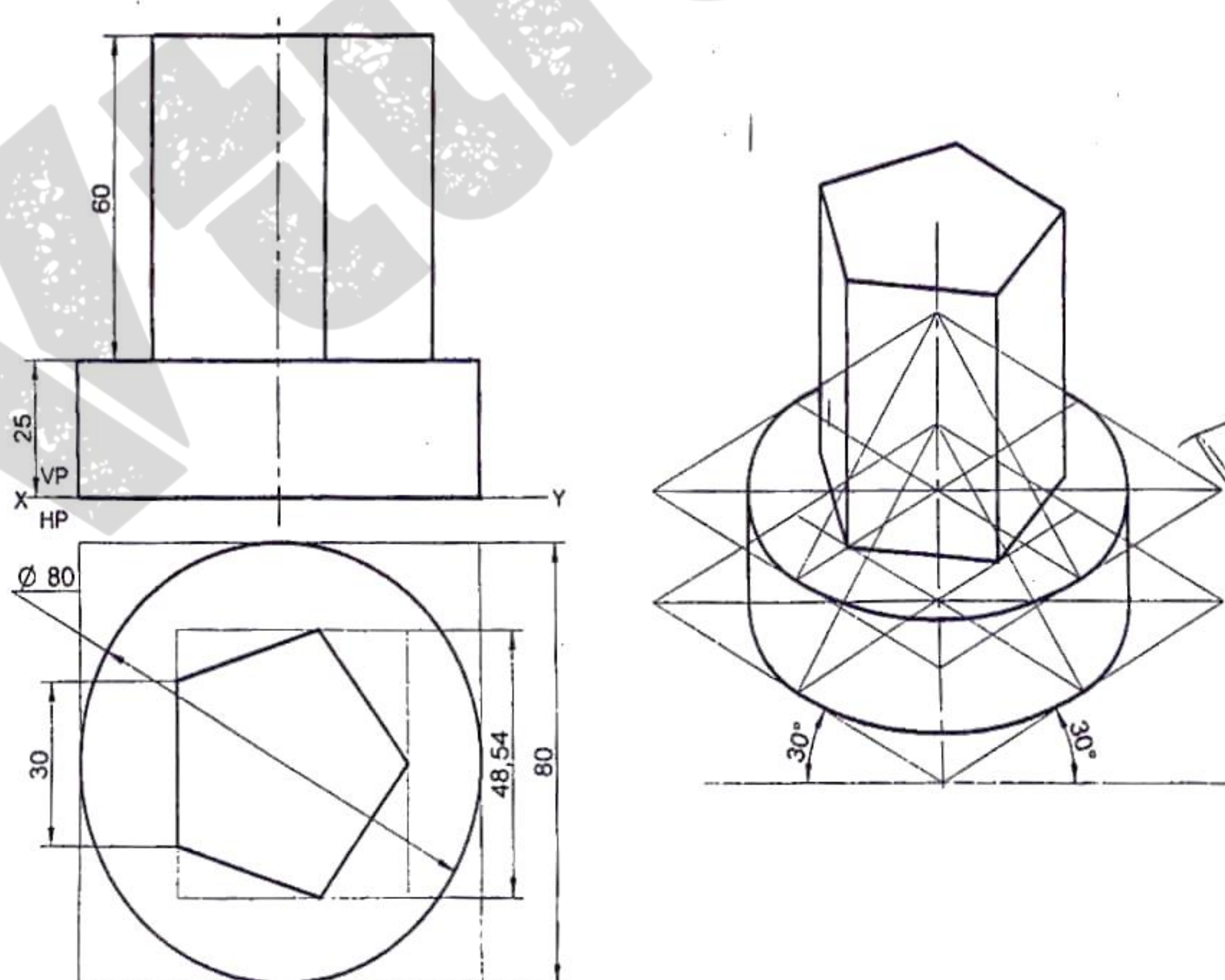
**Problem 7** A square pyramid of base side 40mm and height 70mm rests symmetrically on a cube of edge 50mm, which itself is placed on a cylinder of diameter 80mm and thickness 30mm. Draw the isometric projection of the solids, if the axes of the three solids are in common line.

**Solution**



**Problem 8** A regular pentagonal prism of base edge 30mm and axis 60mm is mounted centrally over a cylindrical block of 80mm diameter and 25mm thick. Draw isometric projection of the combined solids.

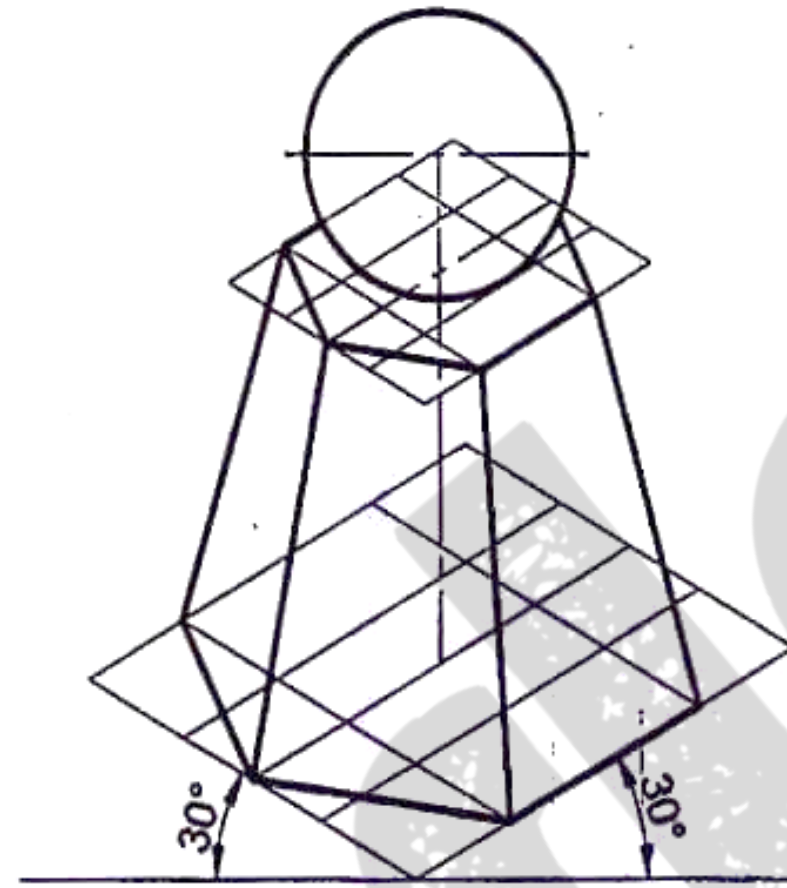
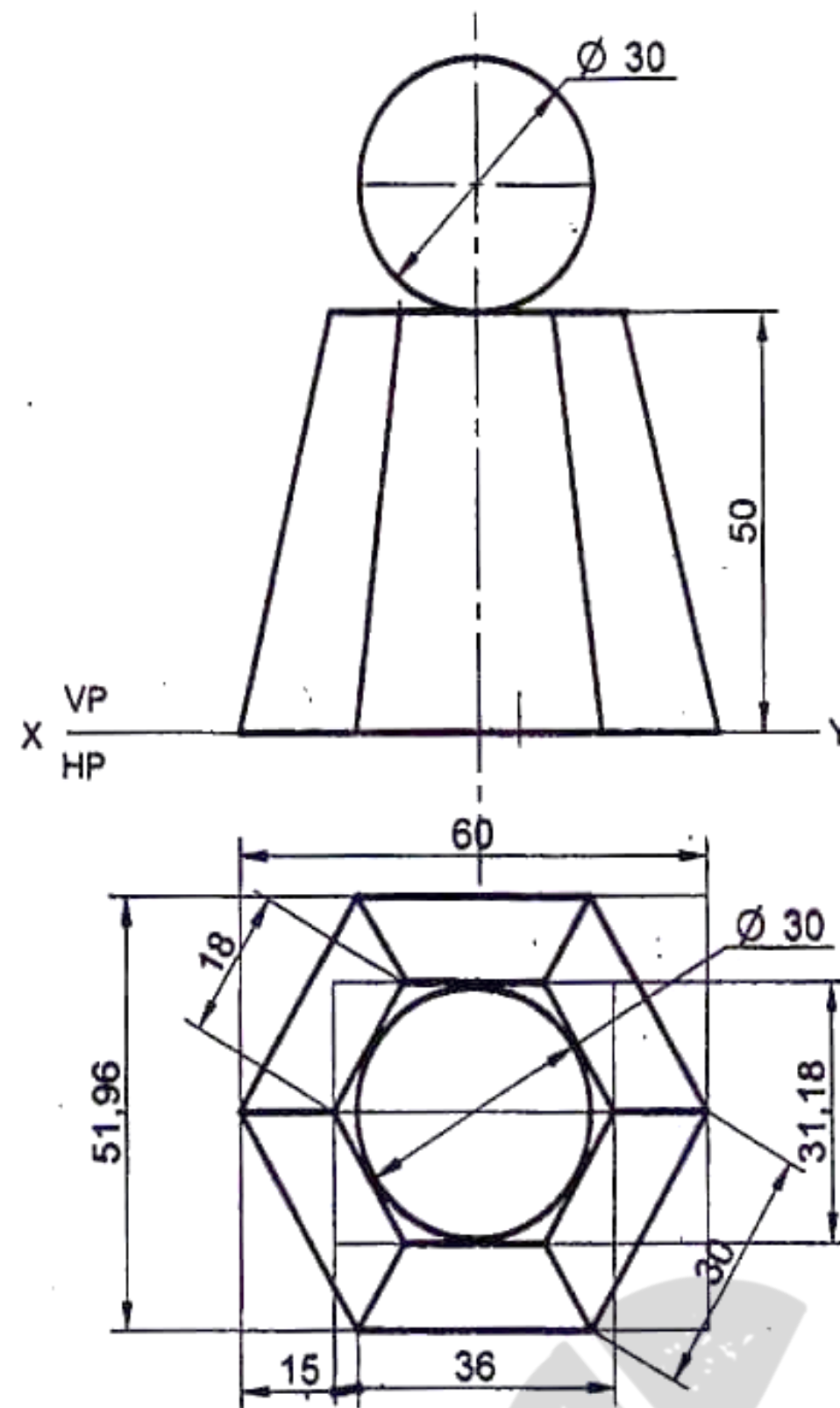
**Solution**





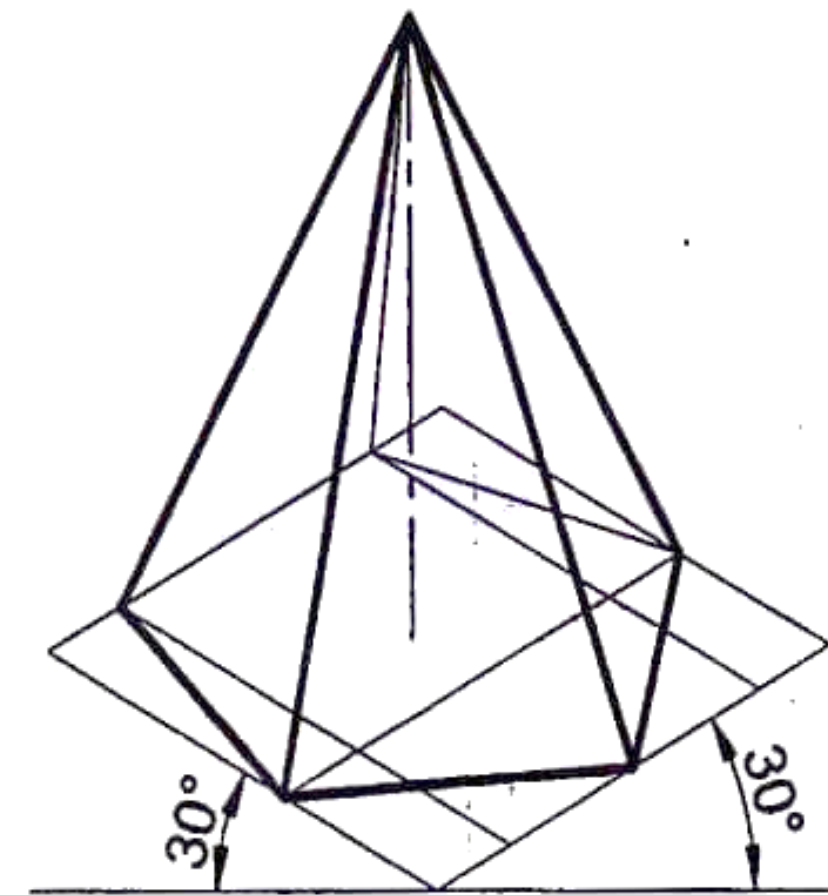
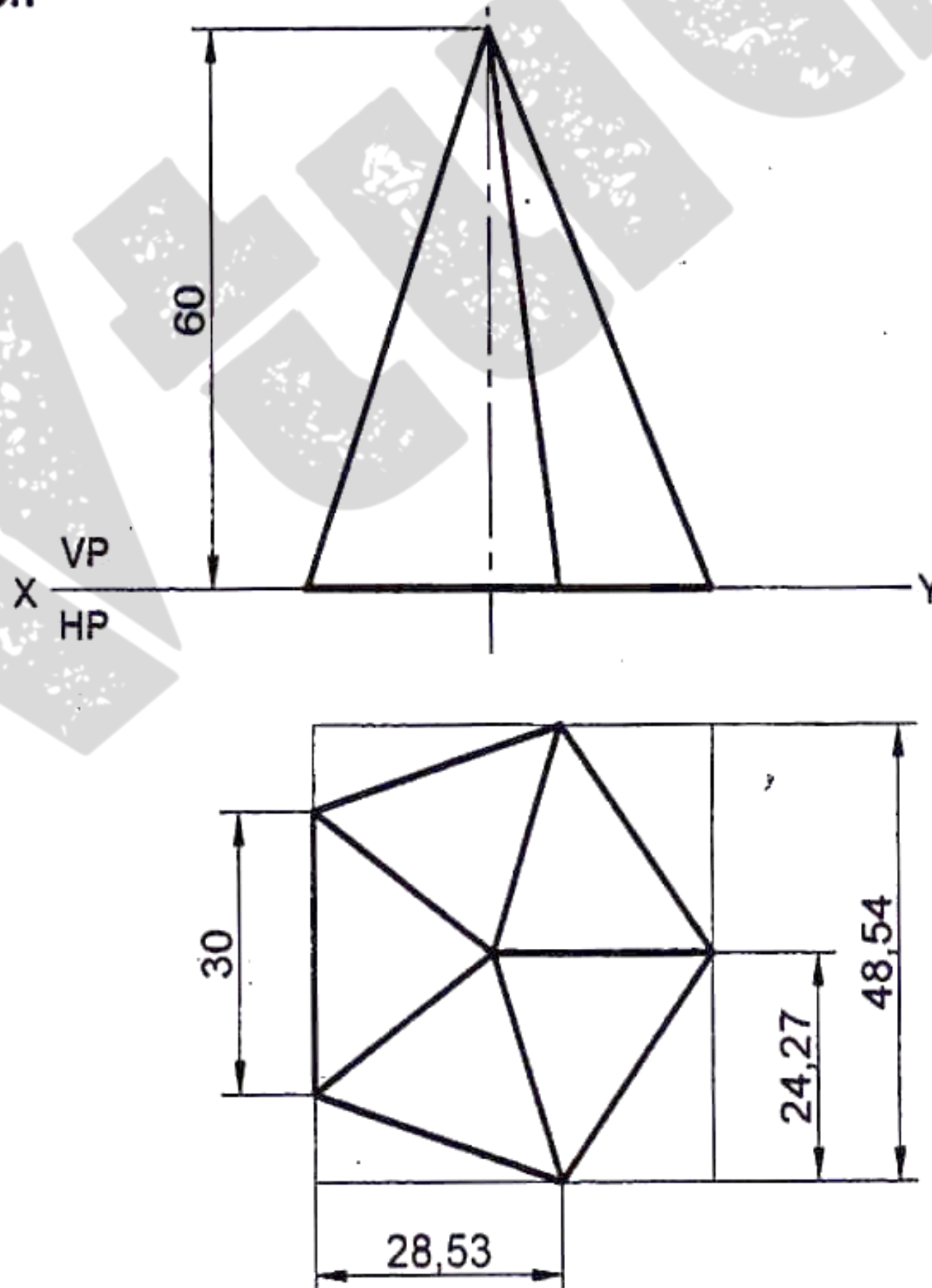
**Problem 9** A sphere of diameter 30mm rests on the frustum of a hexagonal pyramid base 30mm, top face 18mm side and height 50mm, such that their axes coincide. Draw the isometric projection of the combined solids.

**Solution**



**Problem 10** A pentagonal pyramid of base side 30mm and axis length 60mm is resting on HP on its base with a side of base perpendicular to VP. Draw its isometric projections

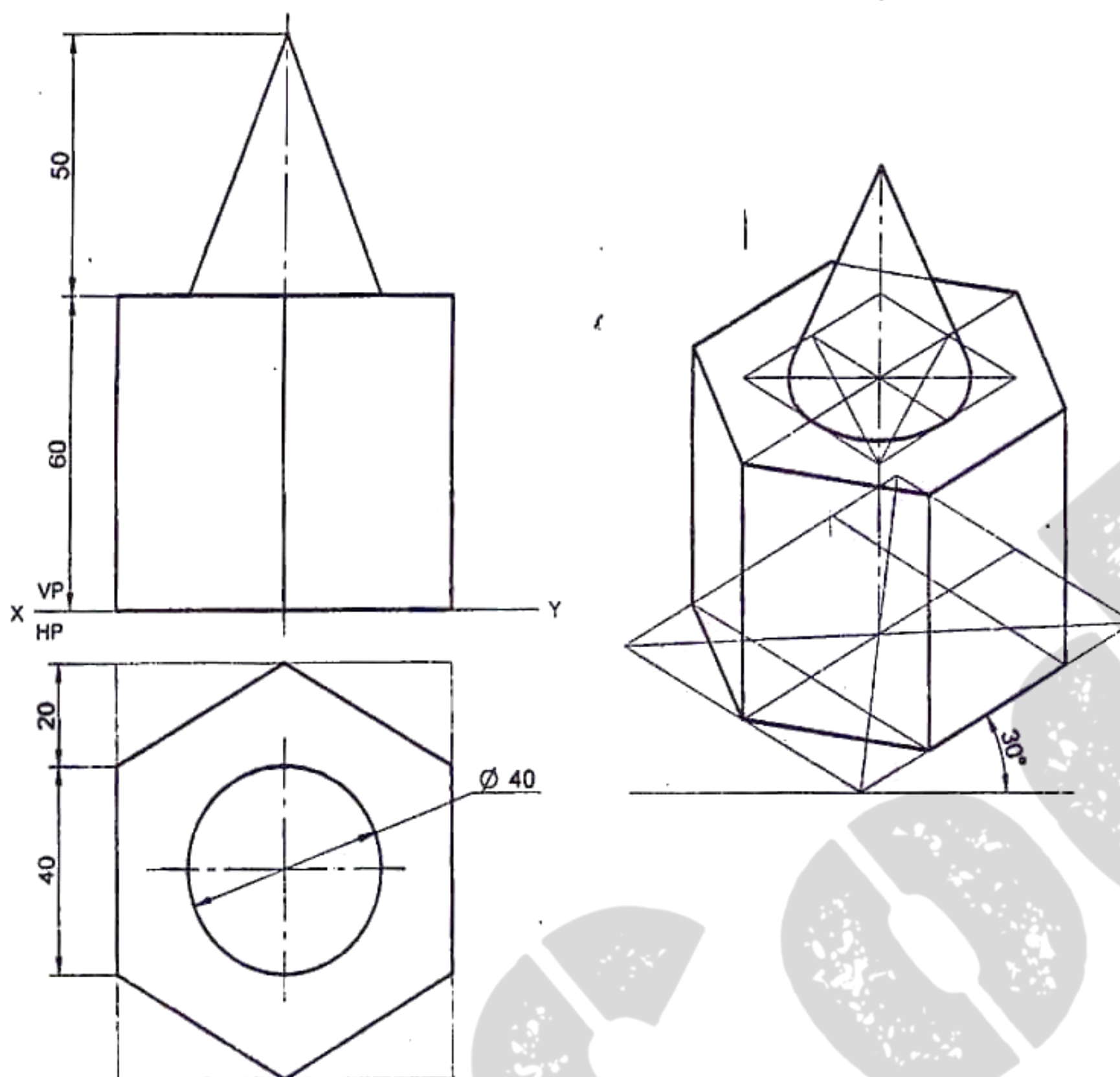
**Solution**





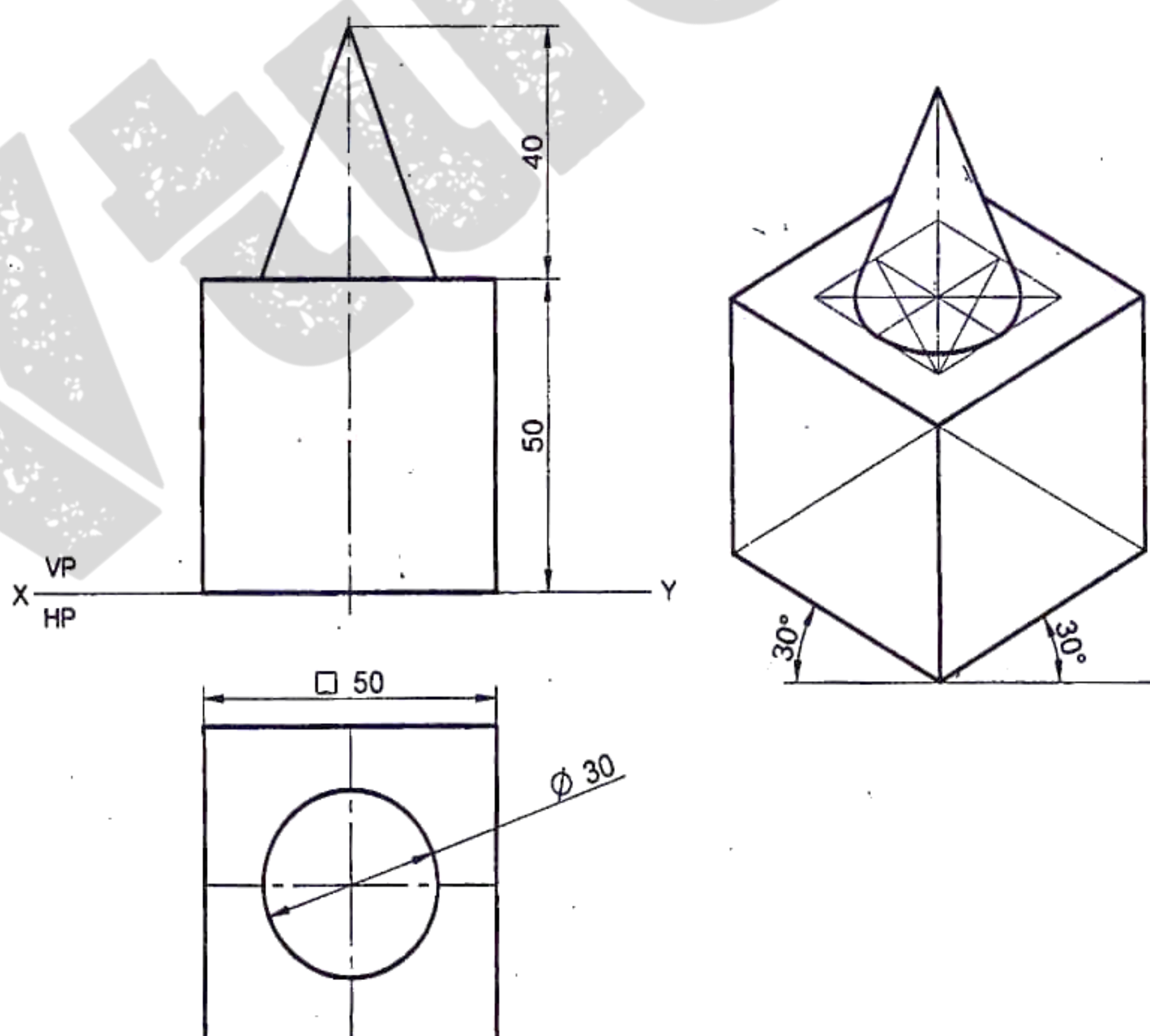
**Problem 11** Draw isometric projection of a hexagonal prism of side of base 40mm and height 60mm with a right circular cone of base 40mm as diameter and altitude 50mm, resting on its top such that the axes of both the solids are collinear.

**Solution**



**Problem 12** A cone of base diameter 30mm and height 40mm rests centrally over a cube of side 50mm. Draw the isometric projection of the combination of solids

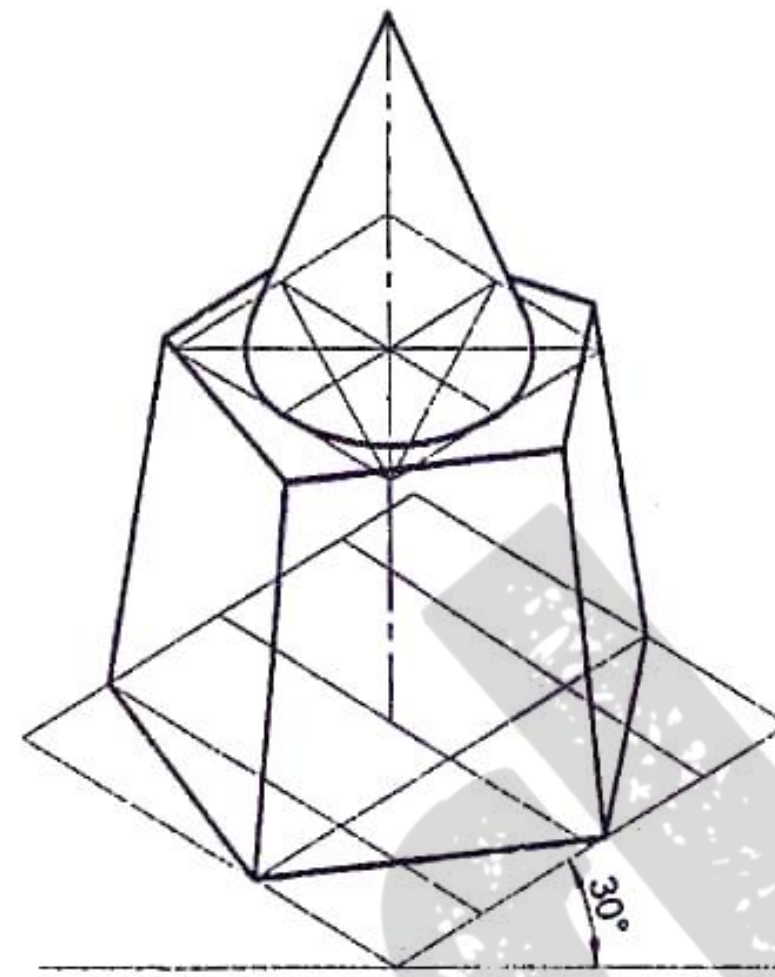
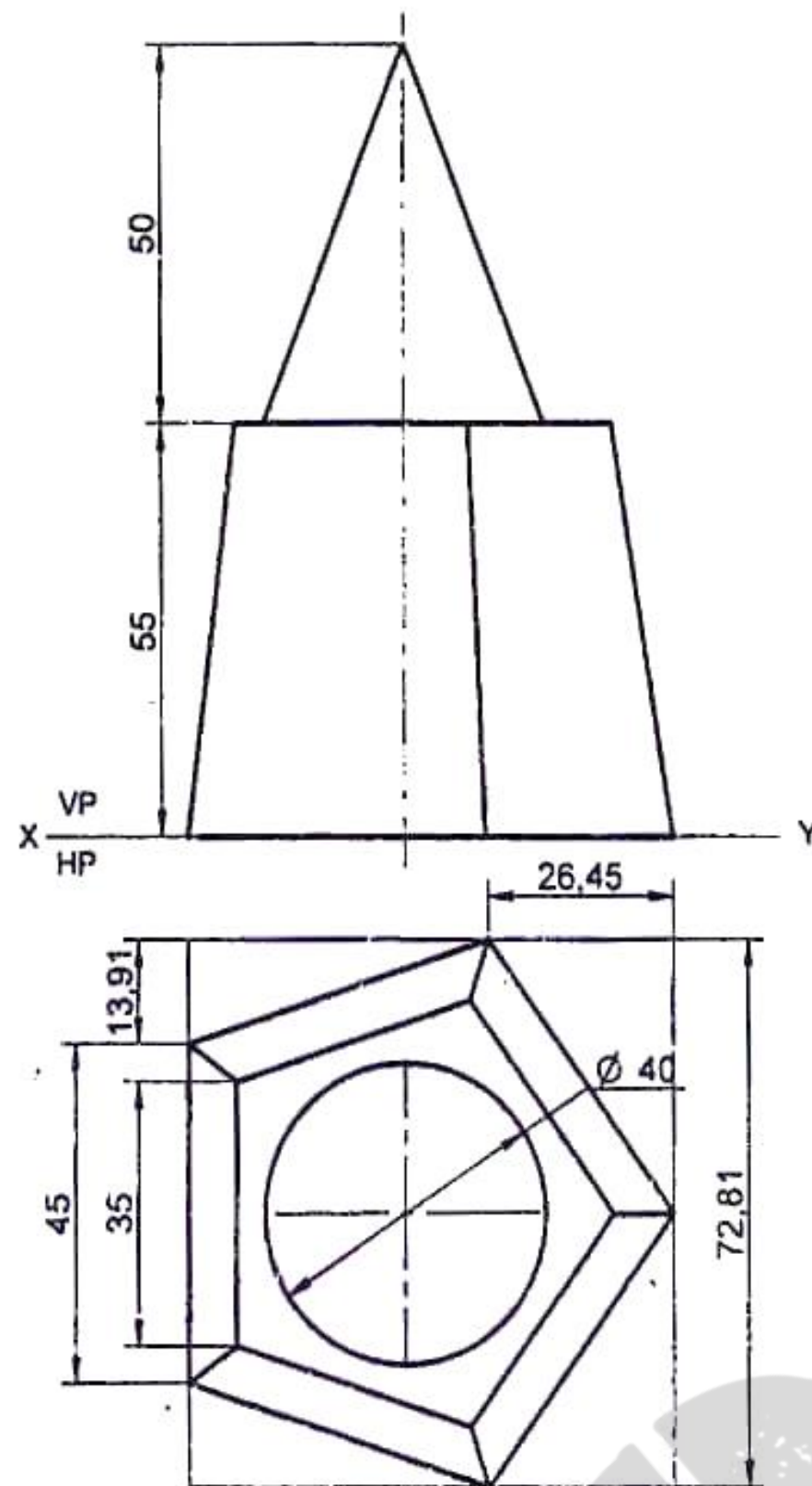
**Solution**





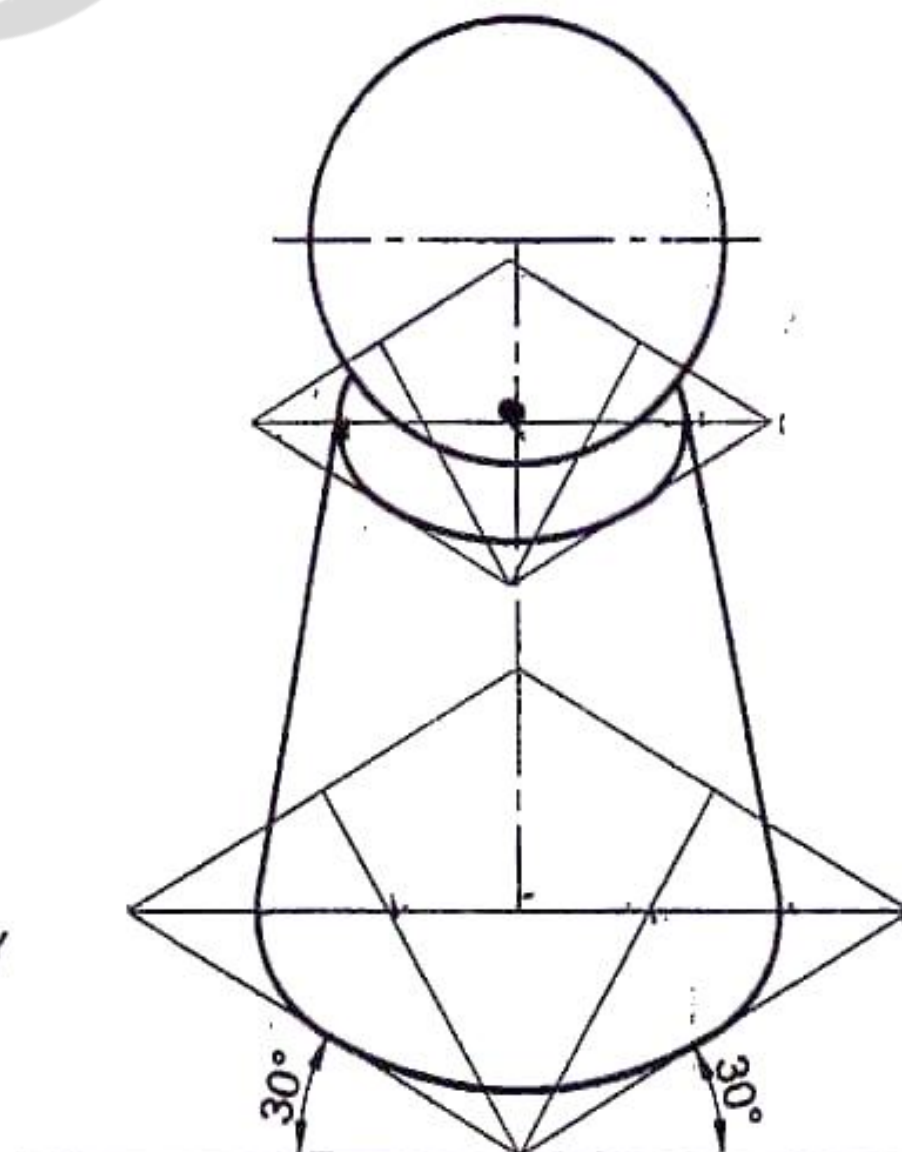
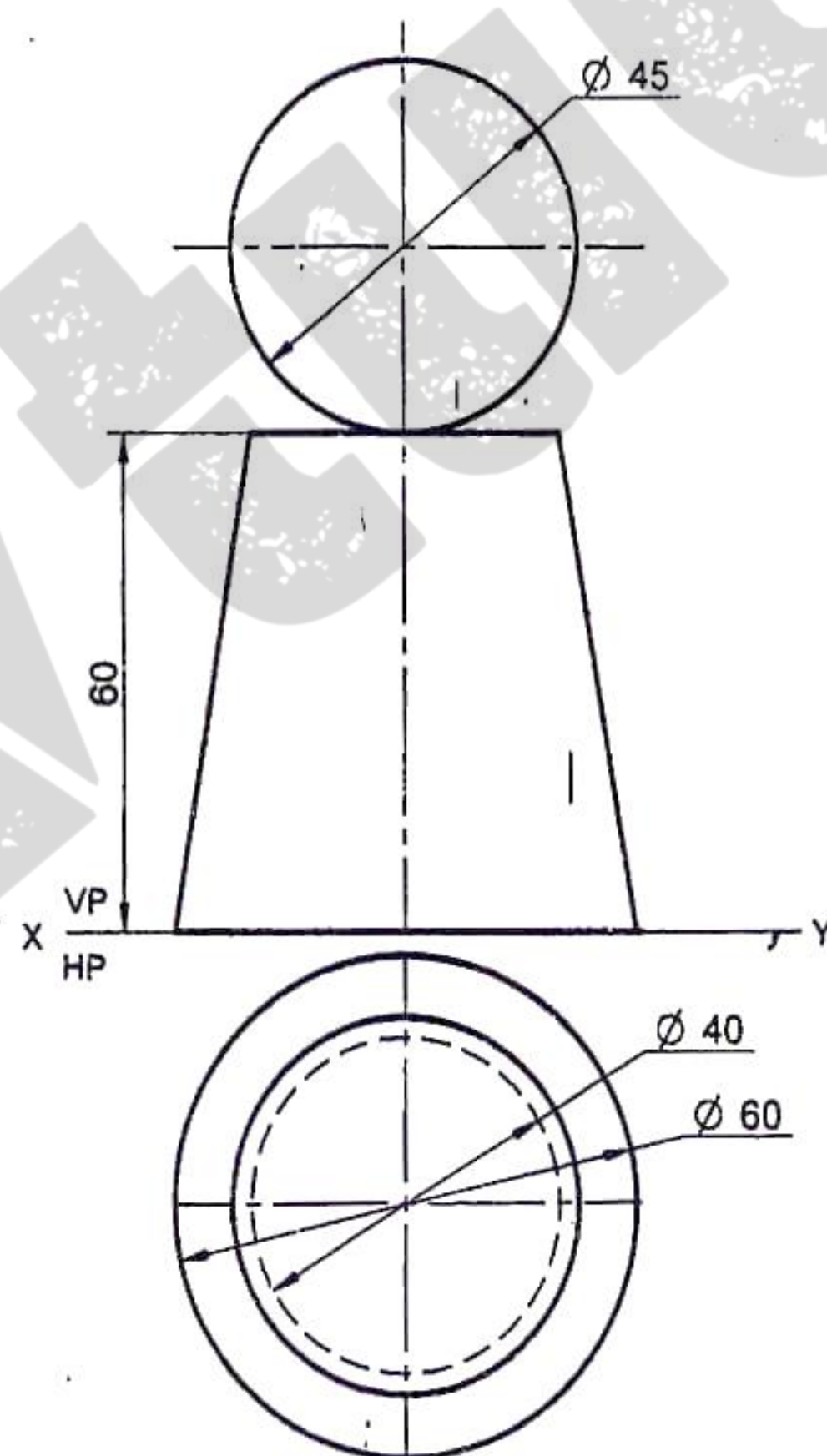
**Problem 13** A cone of base diameter 40mm and height 50mm rests centrally over a frustum of a pentagonal pyramid of base side 45mm and top side 35mm and height 55mm. Draw isometric projections of the solids.

**Solution**



**Problem 14** A sphere of diameter 45mm rests centrally over a frustum of cone of base diameter 60mm, top diameter 40mm and height 60mm. Draw its isometric projections.

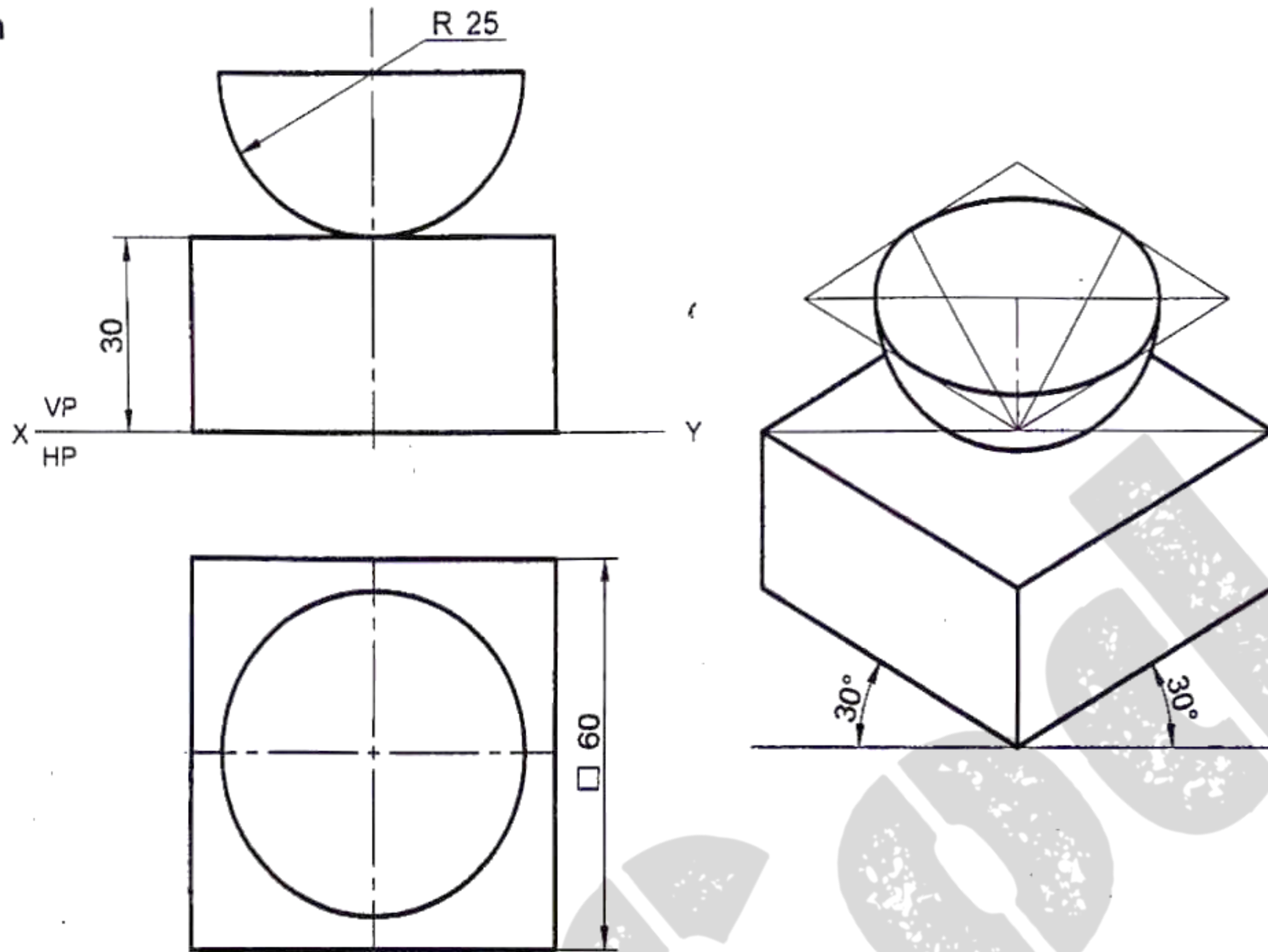
**Solution**





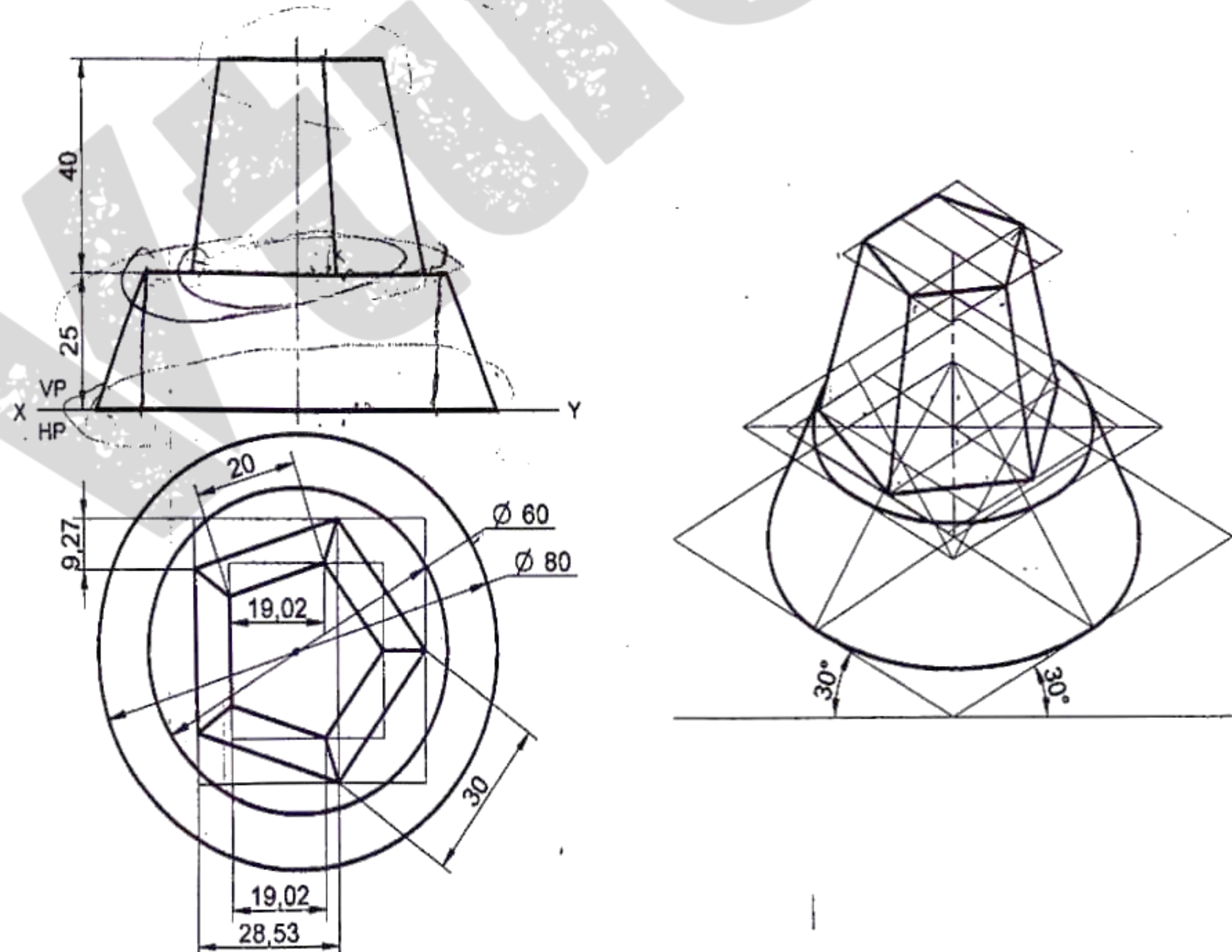
**Problem 15** A hemisphere of diameter 50mm is centrally resting on top of a square prism of base side 60mm and height 30mm such that the curved surface of hemisphere is touching the top face of the prism. Draw its isometric projections

**Solution**



**Problem 16** Draw the isometric projection of the combination of solids formed by a frustum of cone and co-axial frustum of pentagonal pyramid. The lower frustum of cone is of 80mm base diameter, 60mm top diameter and height 25mm. the upper frustum of pyramid is of 30mm side of base, 20mm side of top face and height 40mm.

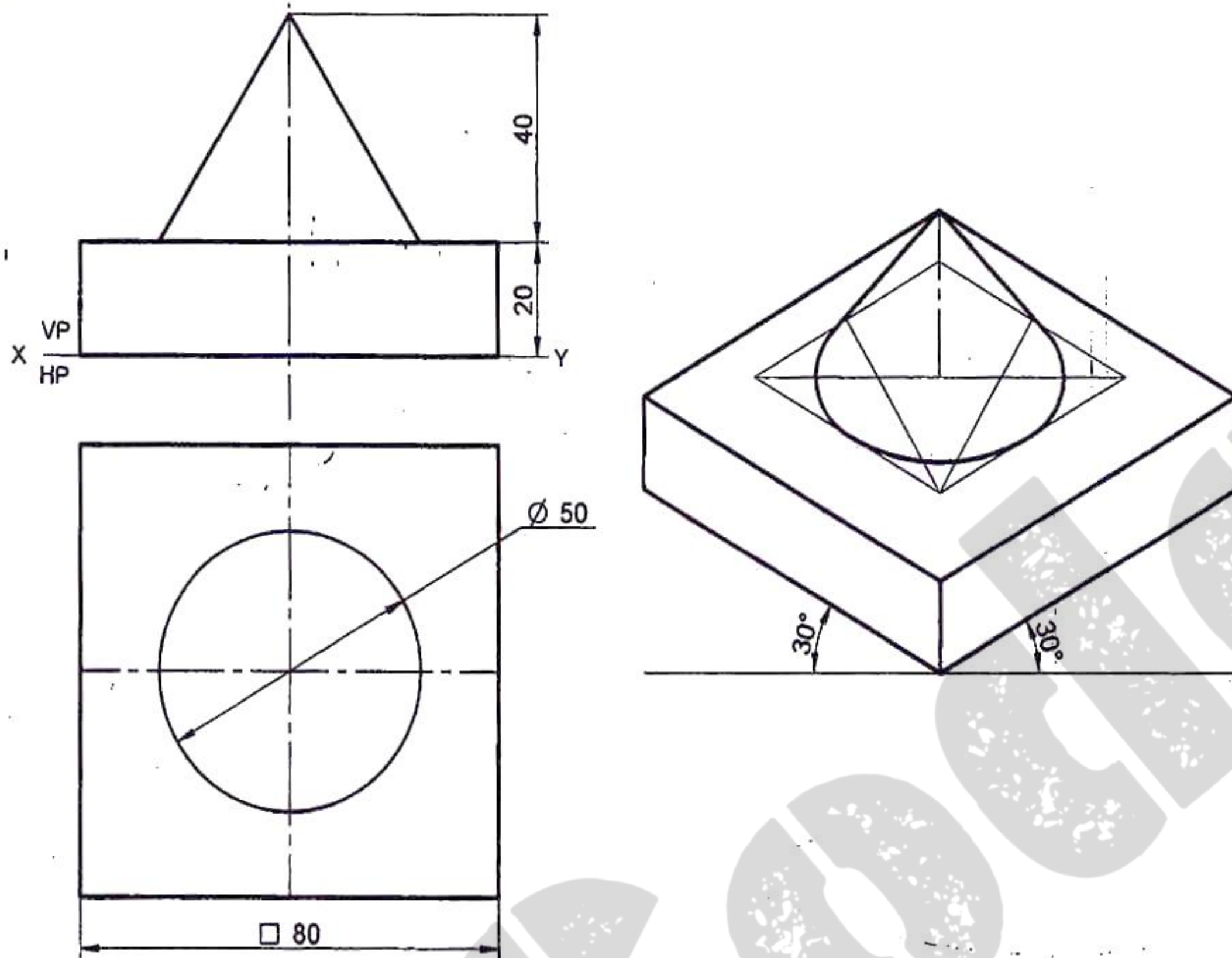
**Solution**





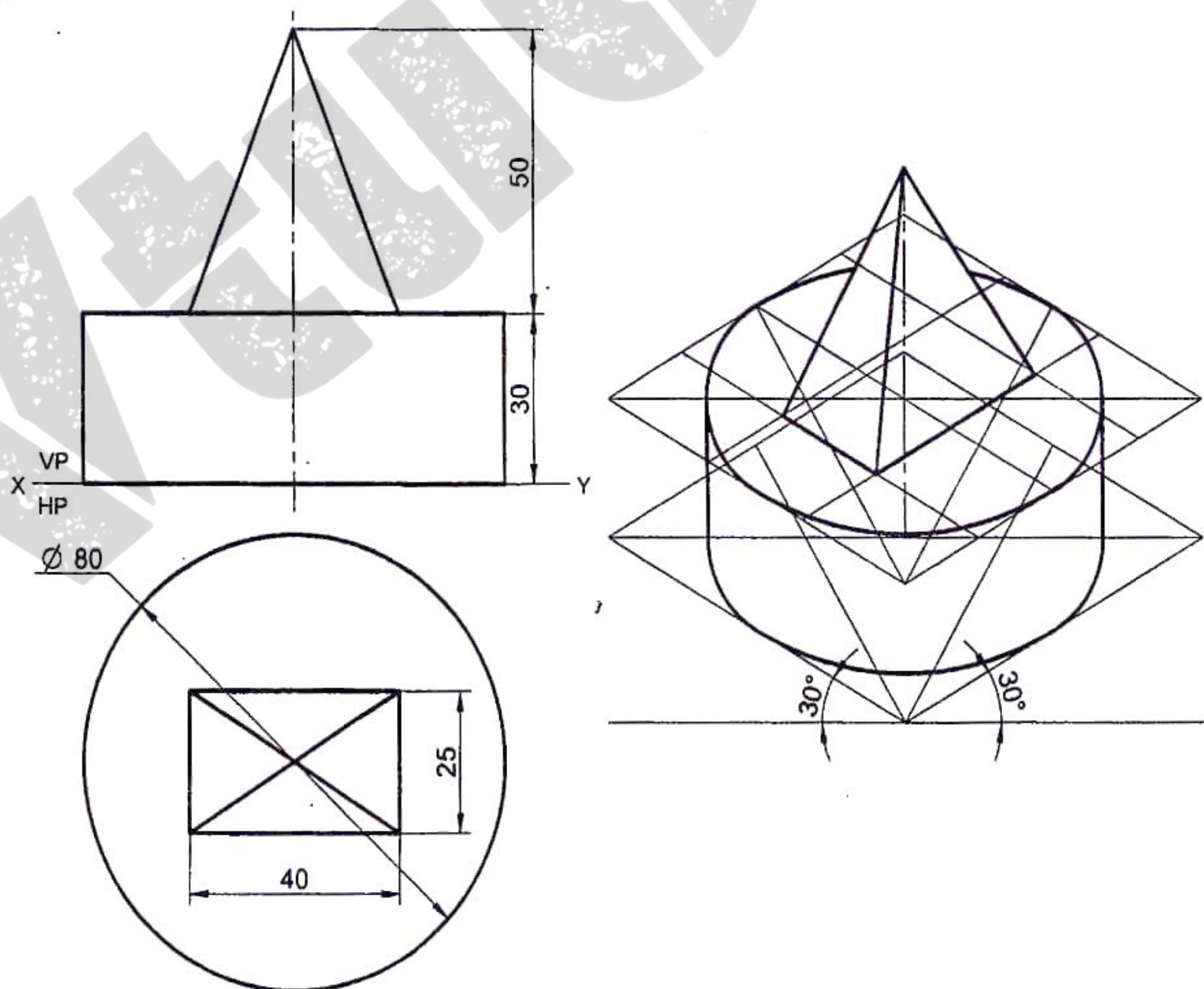
**Problem 17** A cone of base diameter 50mm and height 40mm is placed centrally on the top face of a square slab side-80mm and height 20mm. Draw the isometric projection of the combination

**Solution**



**Problem 18** A rectangular pyramid of base-40mmx25mm and height 50mm is placed centrally on a cylindrical slab of diameter 100mm and thickness-30mm. Draw the isometric projection of the combination

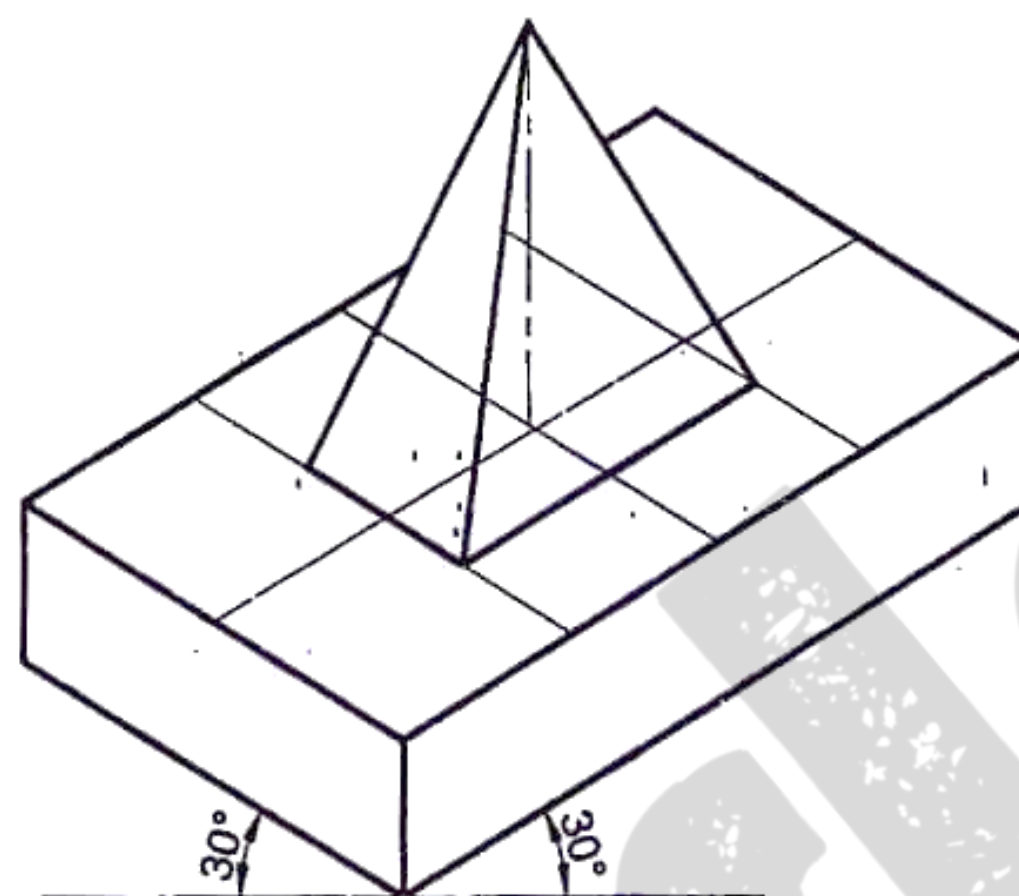
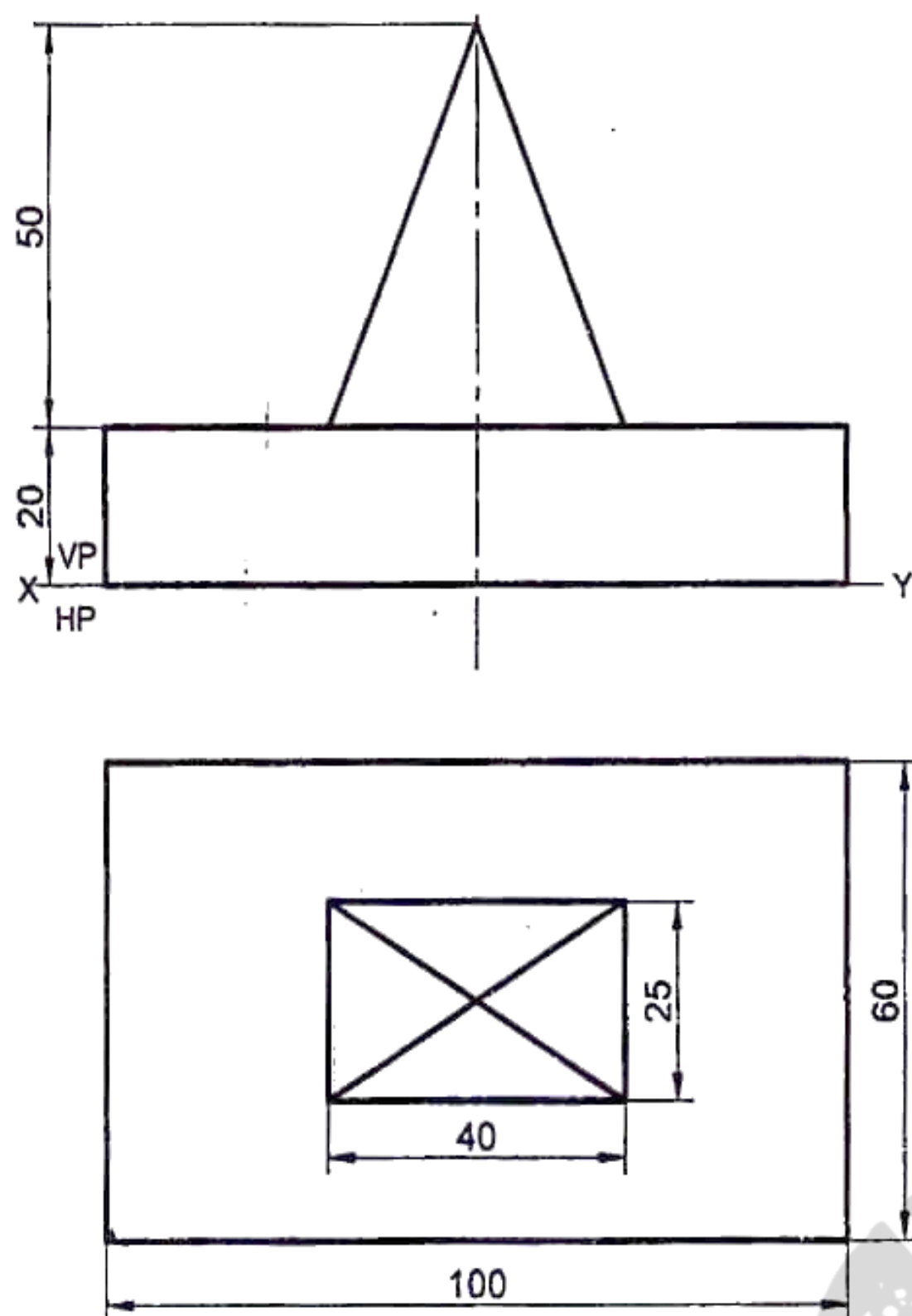
**Solution**





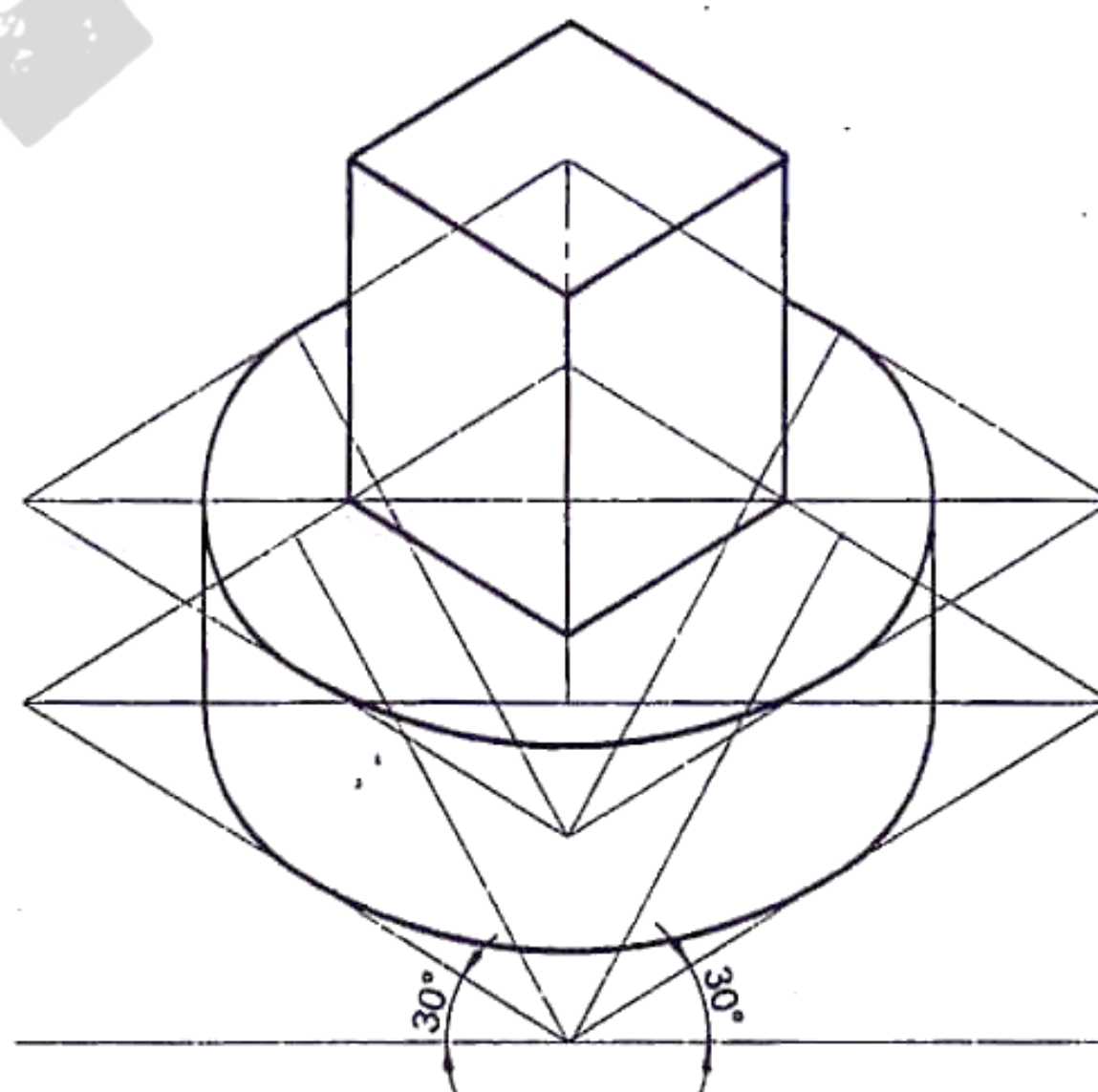
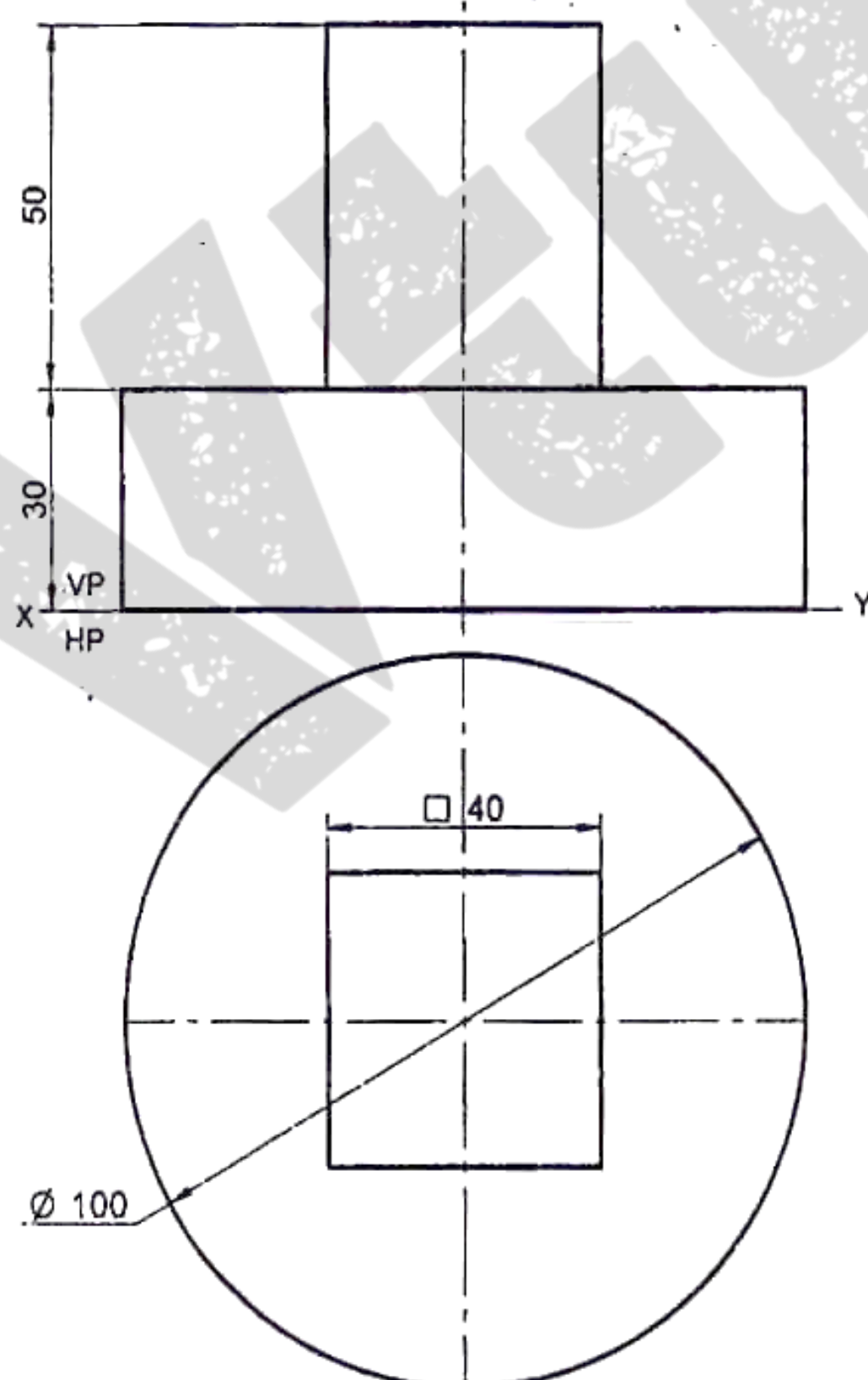
**Problem 19** A rectangular pyramid of base-40mmx25mm and height50mm is placed centrally on a rectangular slab sides-100mmx60mm and thickness-20mm. Draw the isometric projection of the combination

**Solution**



**Problem 20** A square prism base side-40mm, height50mm is placed centrally on a cylindrical slab of diameter 100mm and thickness-30mm. Draw the isometric projection of the combination

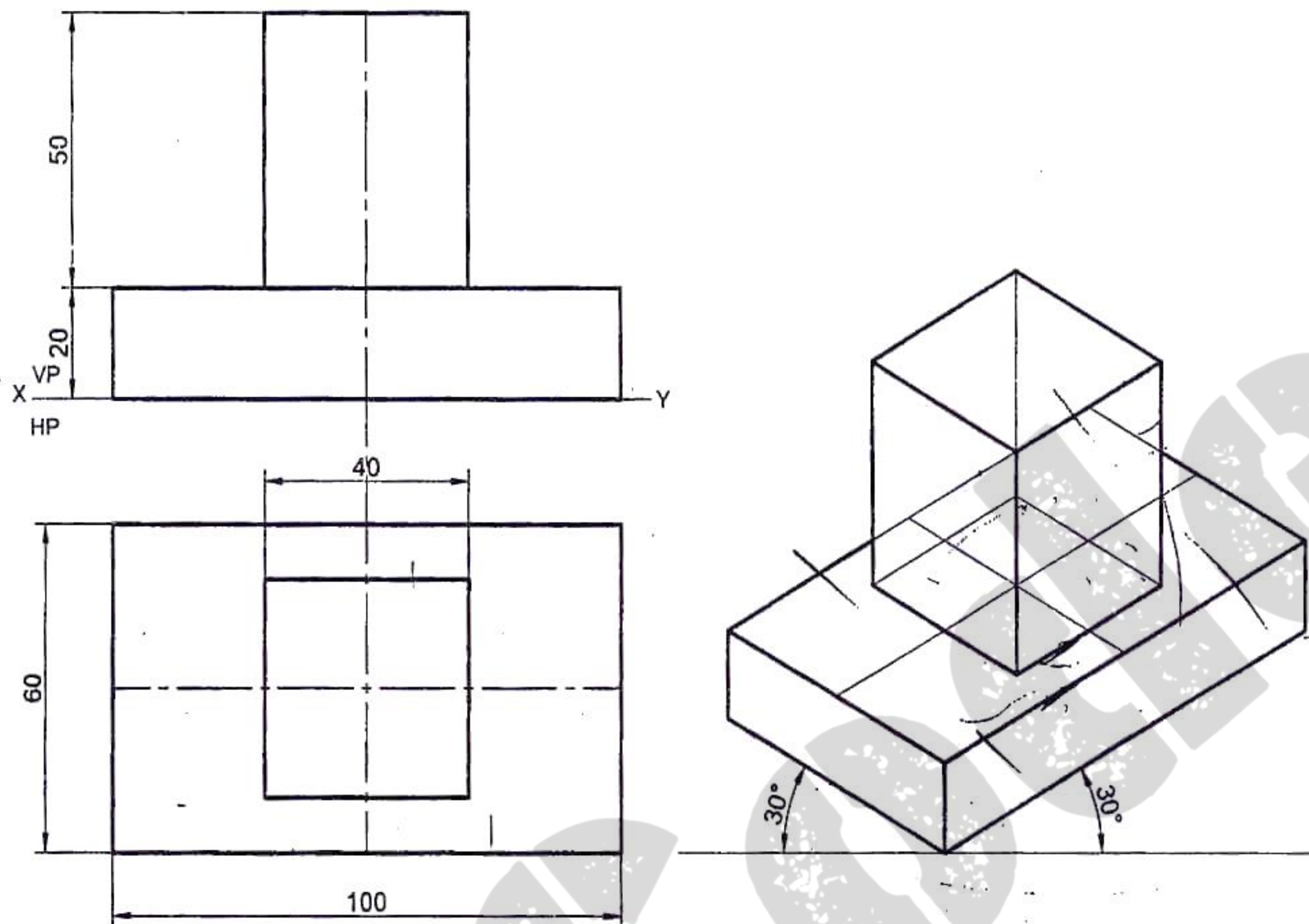
**Solution**





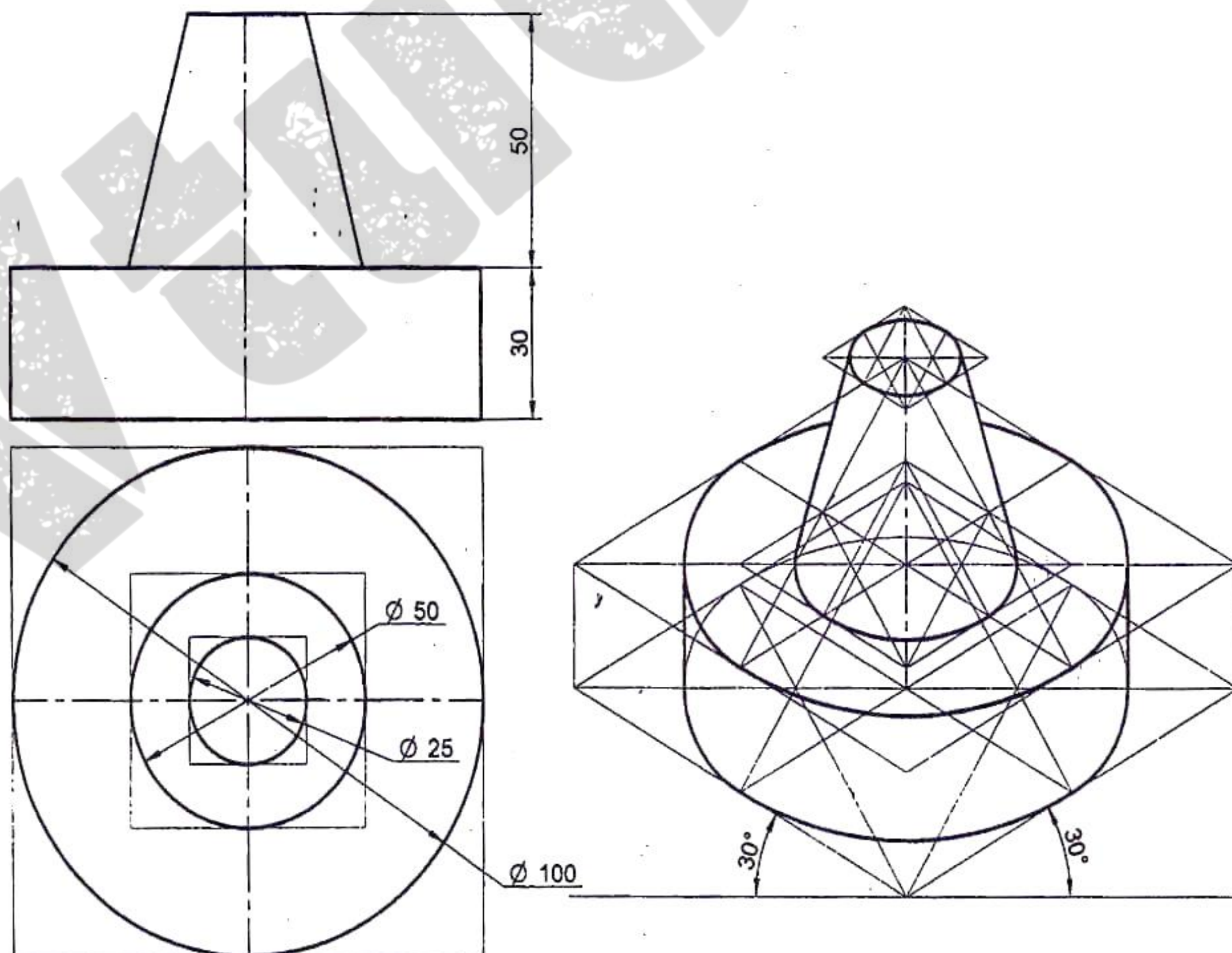
**Problem 21** A square prism base side-40mm, height50mm is placed centrally on a rectangular slab sides-100mmx60mm and thickness-20mm. Draw the isometric projection of the combination

**Solution**



**Problem 22** A frustum of cone base diameter 50mm, top diameter 25mm and height50mm is placed centrally on a cylindrical slab of diameter 100mm and thickness-30mm. Draw the isometric projection of the combination

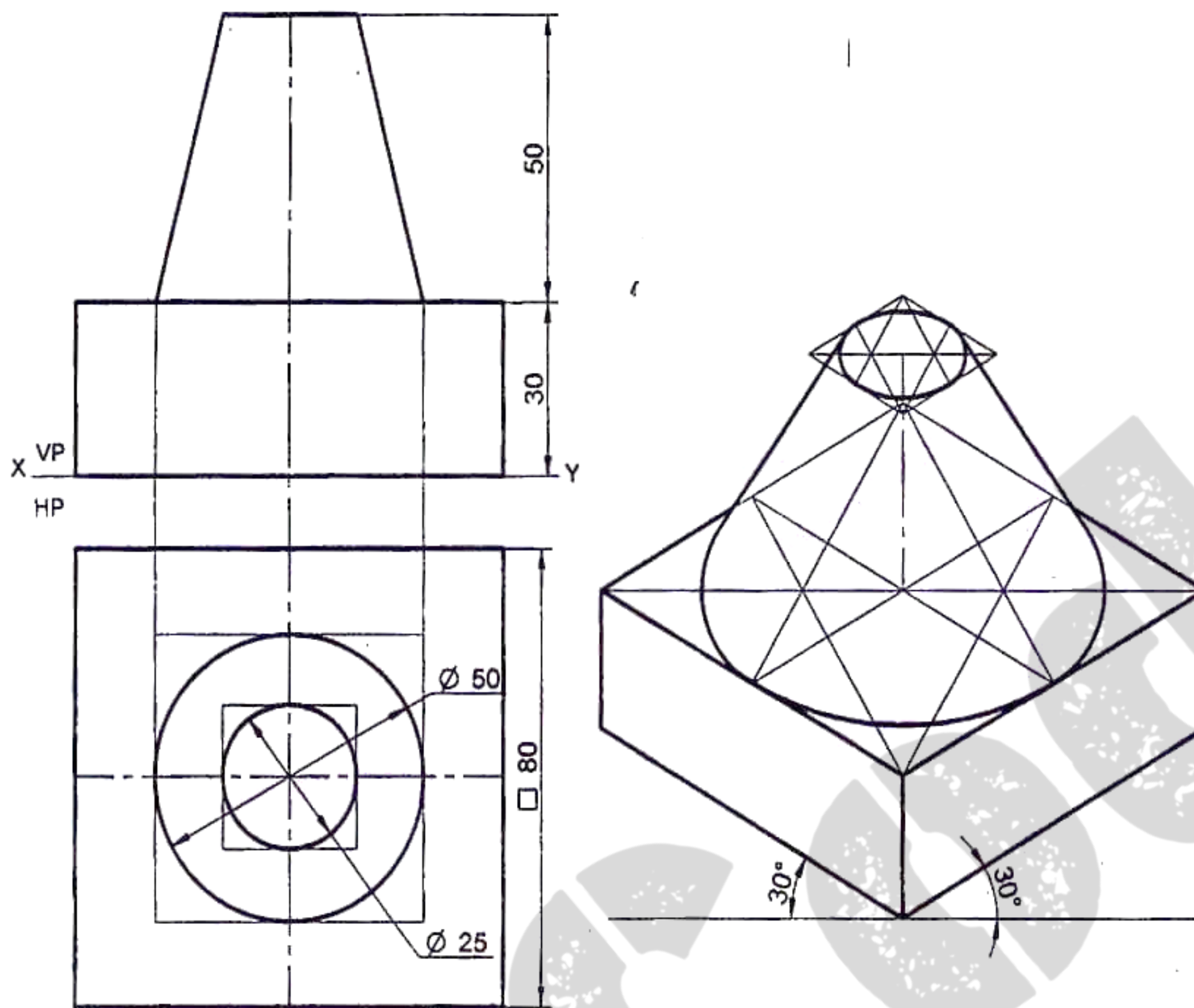
**Solution**





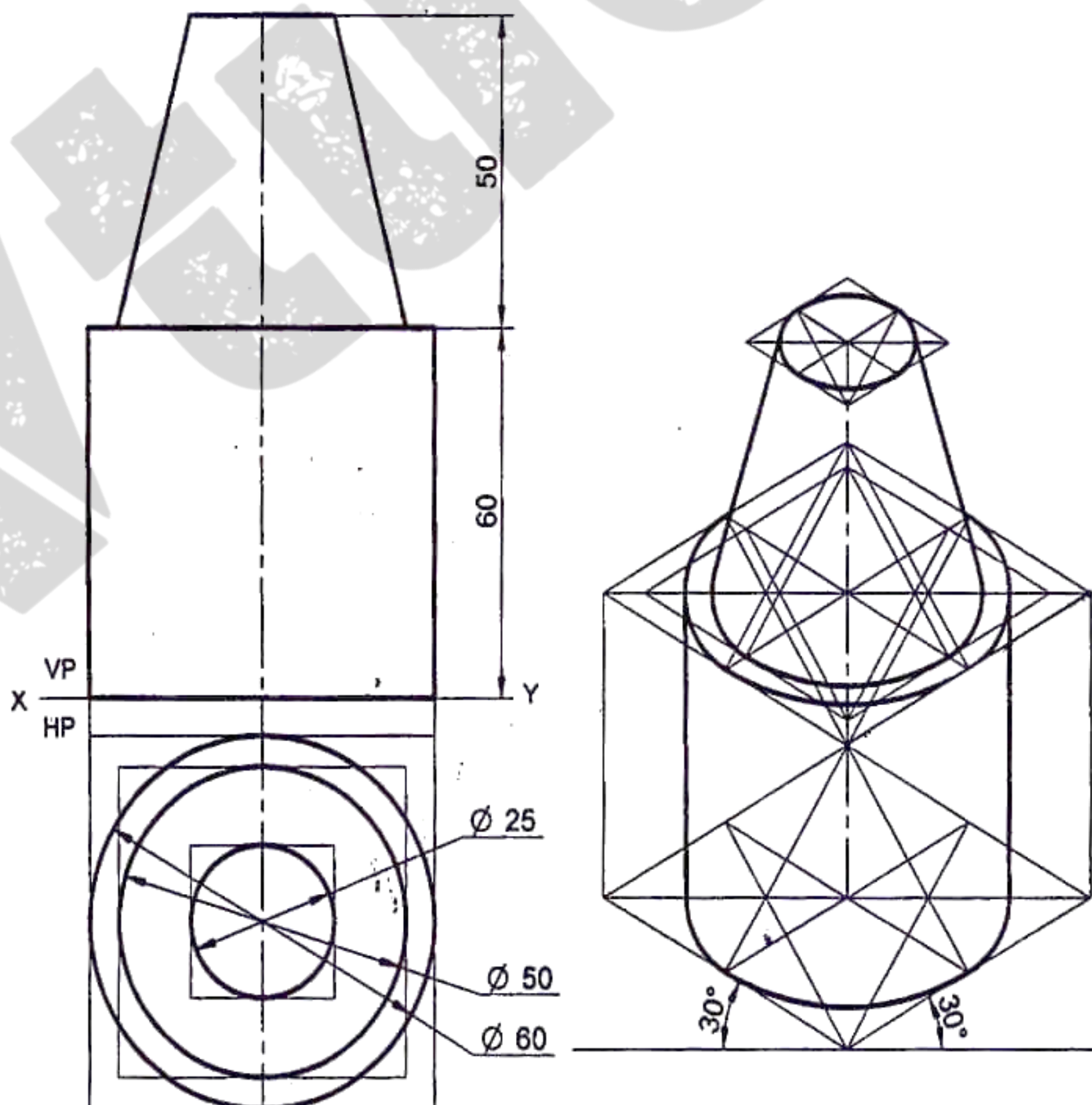
**Problem 23** A frustum of cone base diameter 50mm, top diameter 25mm and height 50mm is placed centrally on a square slab side-80mm and thickness-30mm. Draw the isometric projection of the combination.

**Solution**



**Problem 24** A frustum of cone base diameter 50mm, top diameter 25mm and height 50mm is placed centrally on the top face of a cylinder diameter 60mm and height 60mm. Draw the isometric projection of the combination.

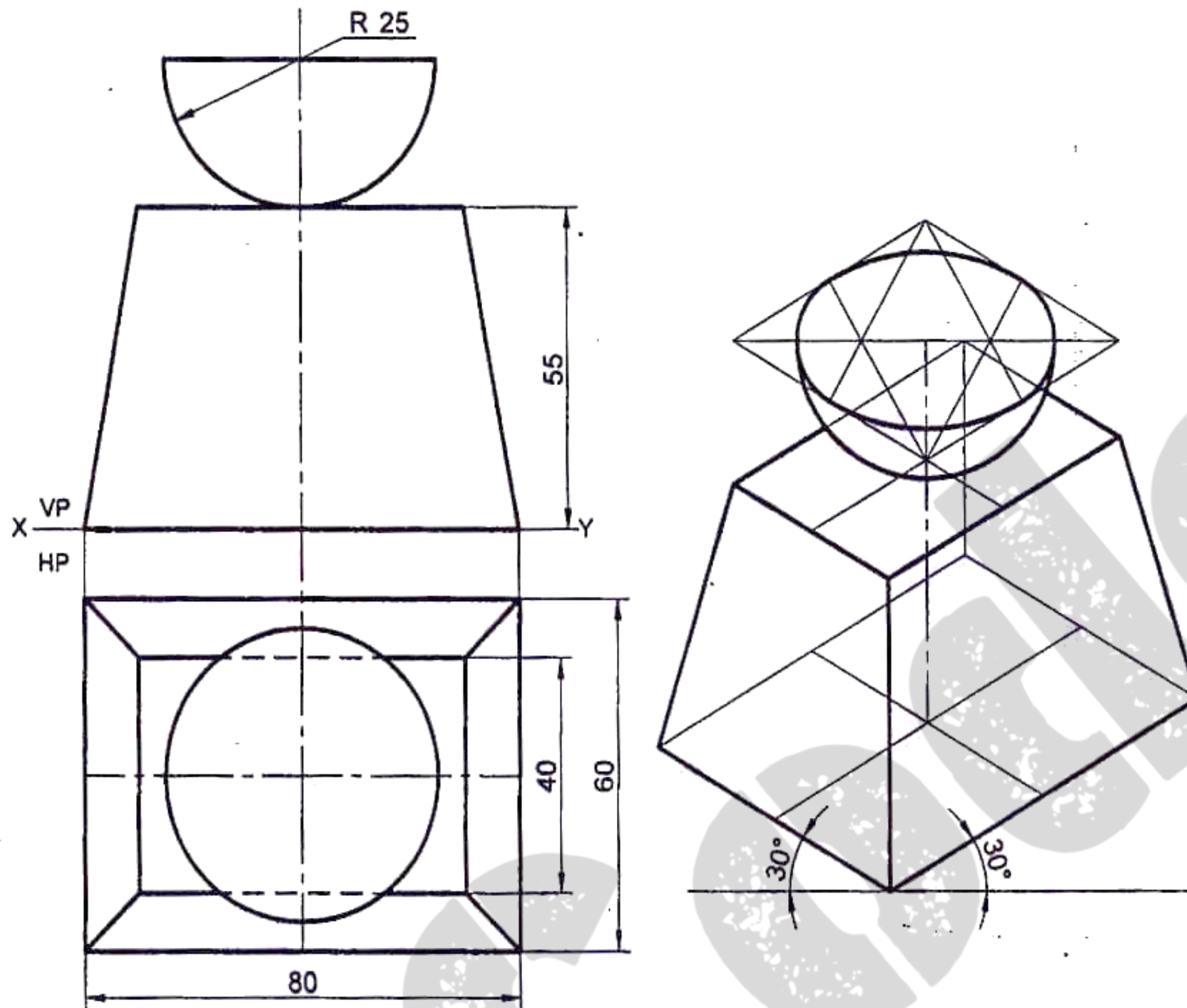
**Solution**





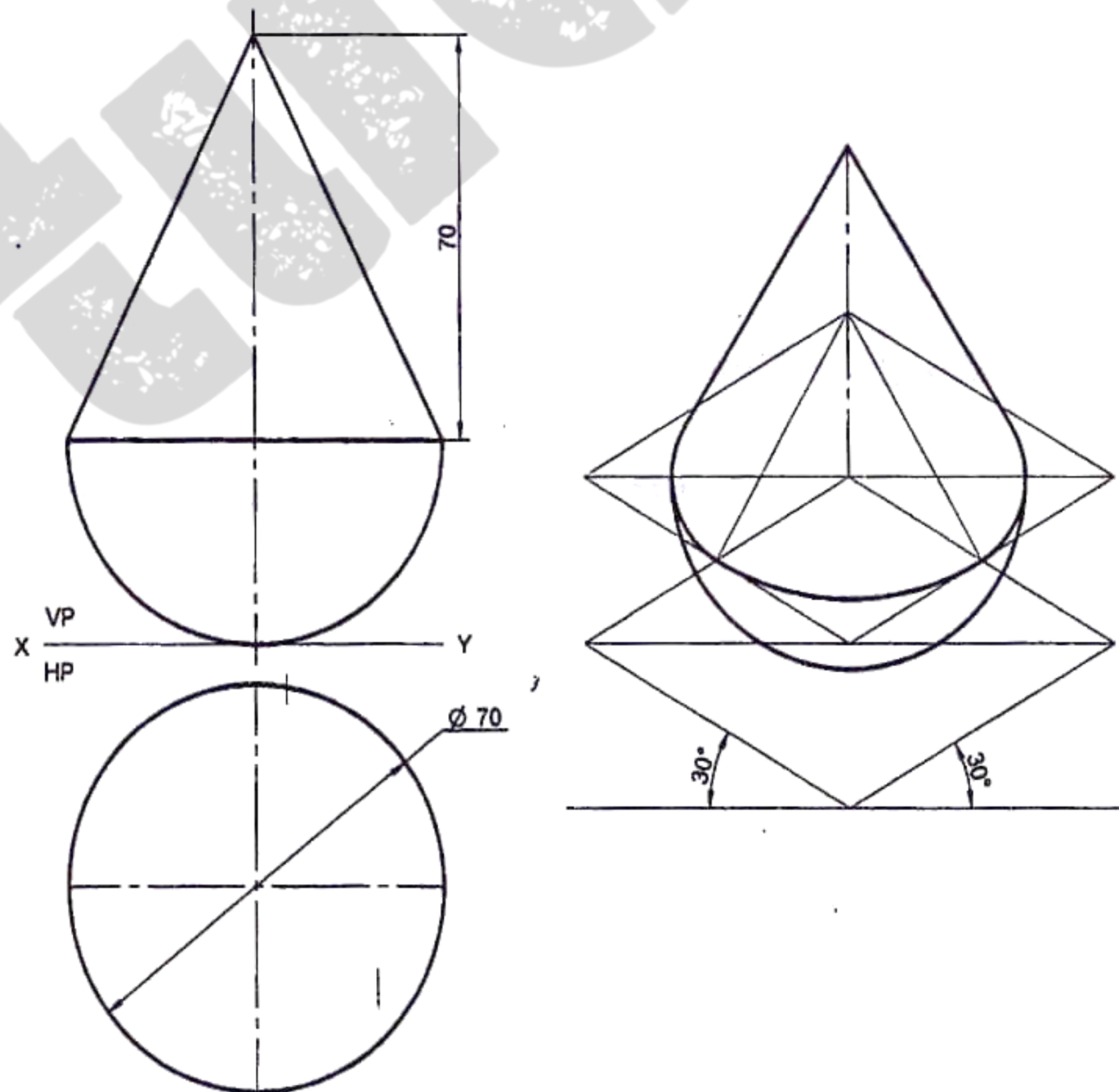
**Problem 25** A hemisphere diameter 50mm is resting on its curved surface centrally on the top face of frustum of a rectangular pyramid base-80mmx60mm and top-60mmx40mm, height 55mm. Draw the isometric projection of the combination

**Solution**



**Problem 26** A hemisphere diameter 70mm is placed on the ground on its curved surface. A cone base diameter 70mm and height 70mm is placed centrally on it. Draw the isometric projection of the combination

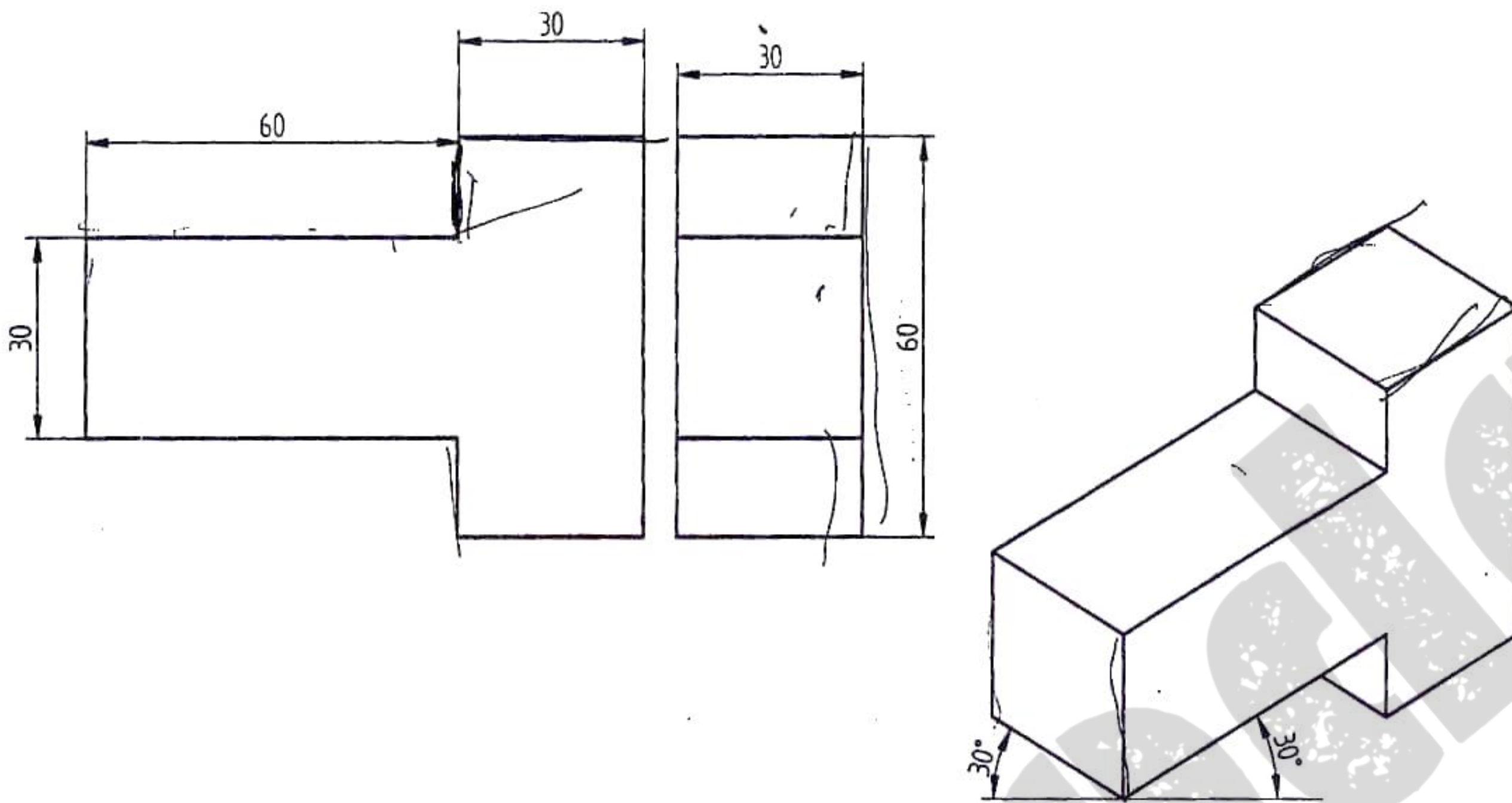
**Solution**





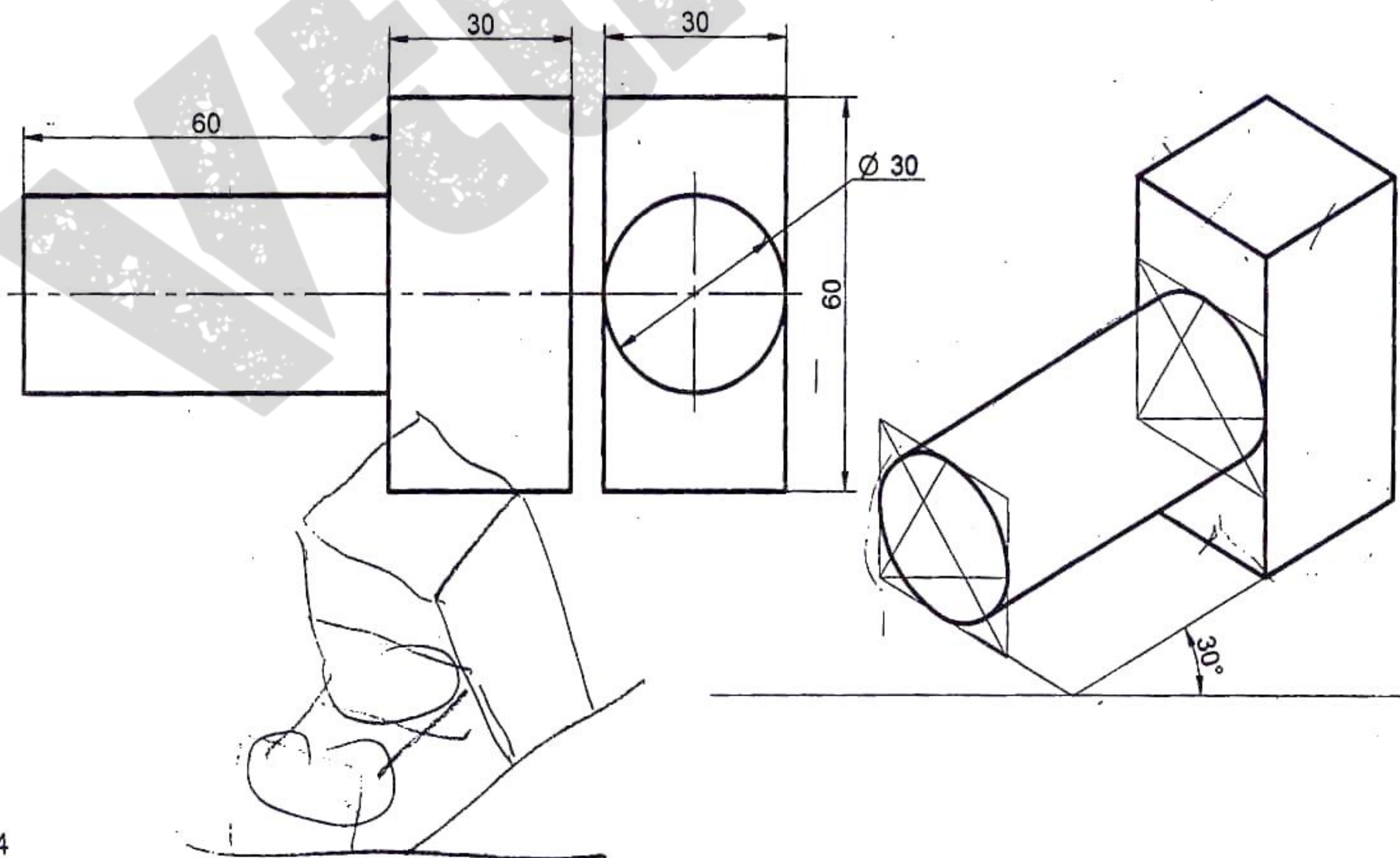
**Problem 27** Following figure shows the front and side views of solid. Draw the Isometric projection of the solid.

**Solution**



**Problem 28** Following figure shows the front and side views of solid. Draw the Isometric projection of the solid.

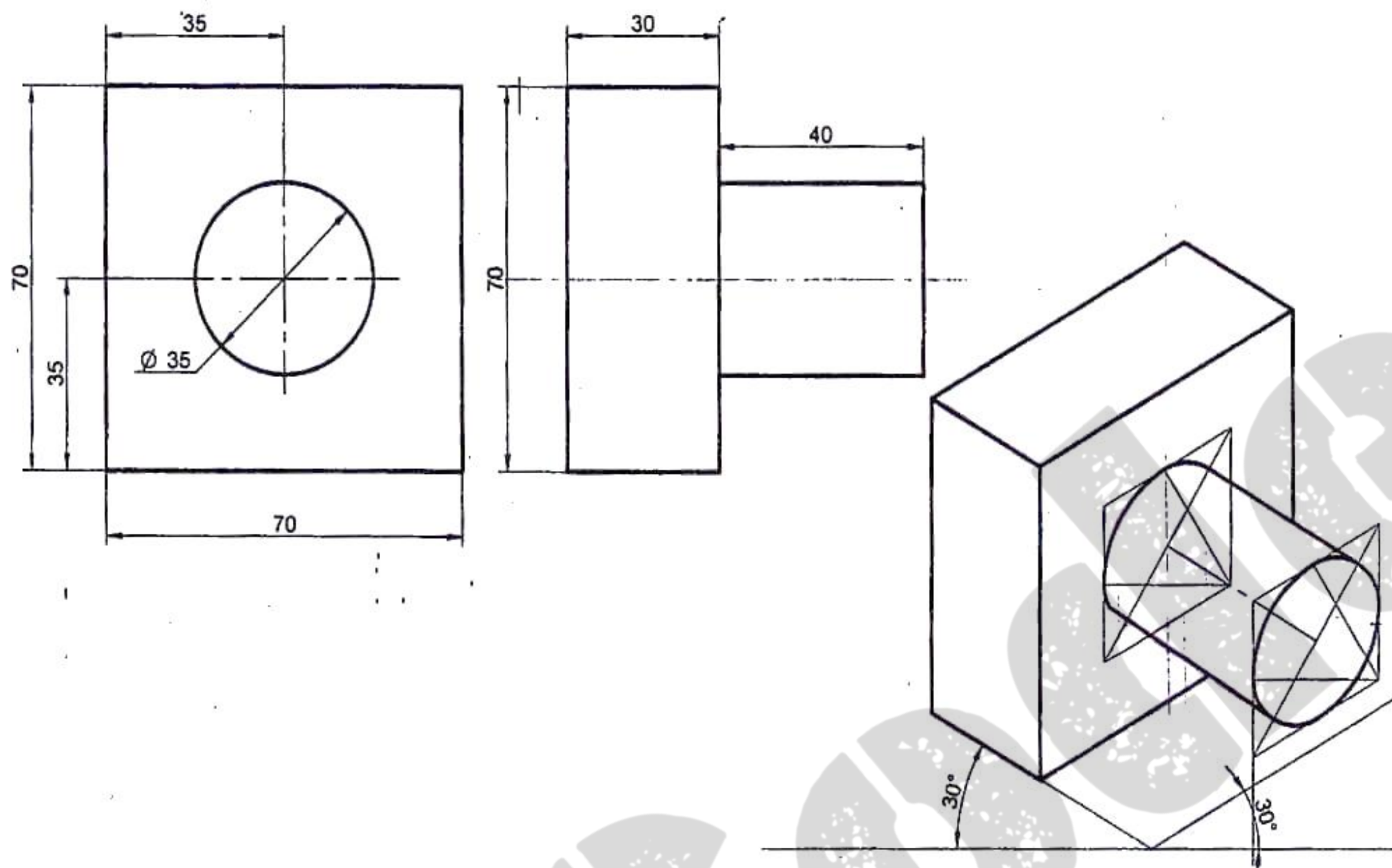
**Solution**





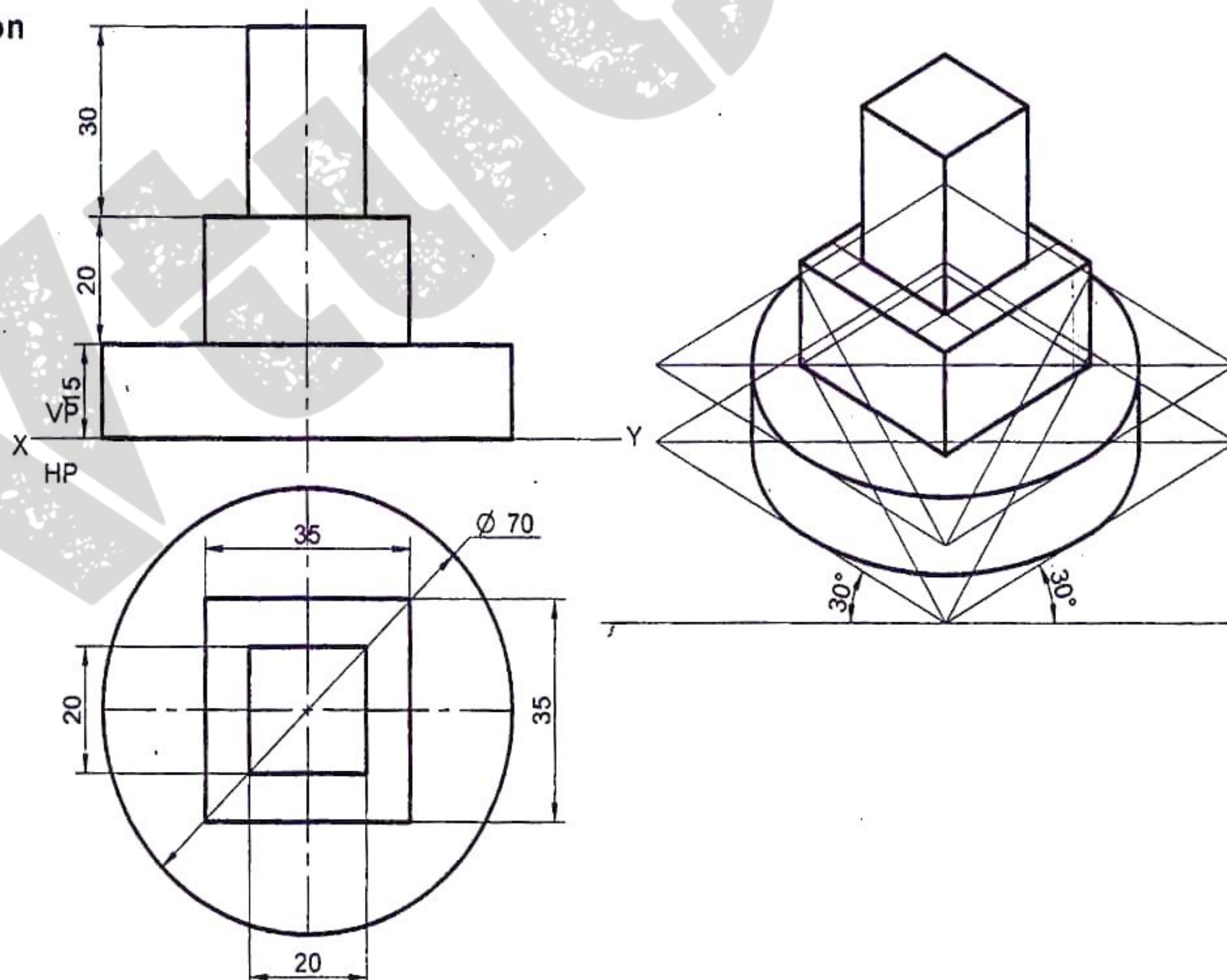
**Problem 29** Following figure shows the front and side views of solid. Draw the Isometric projection of the solid.

**Solution**



**Problem 30** Following figure shows the front and top views of solid. Draw the Isometric projection of the solid.

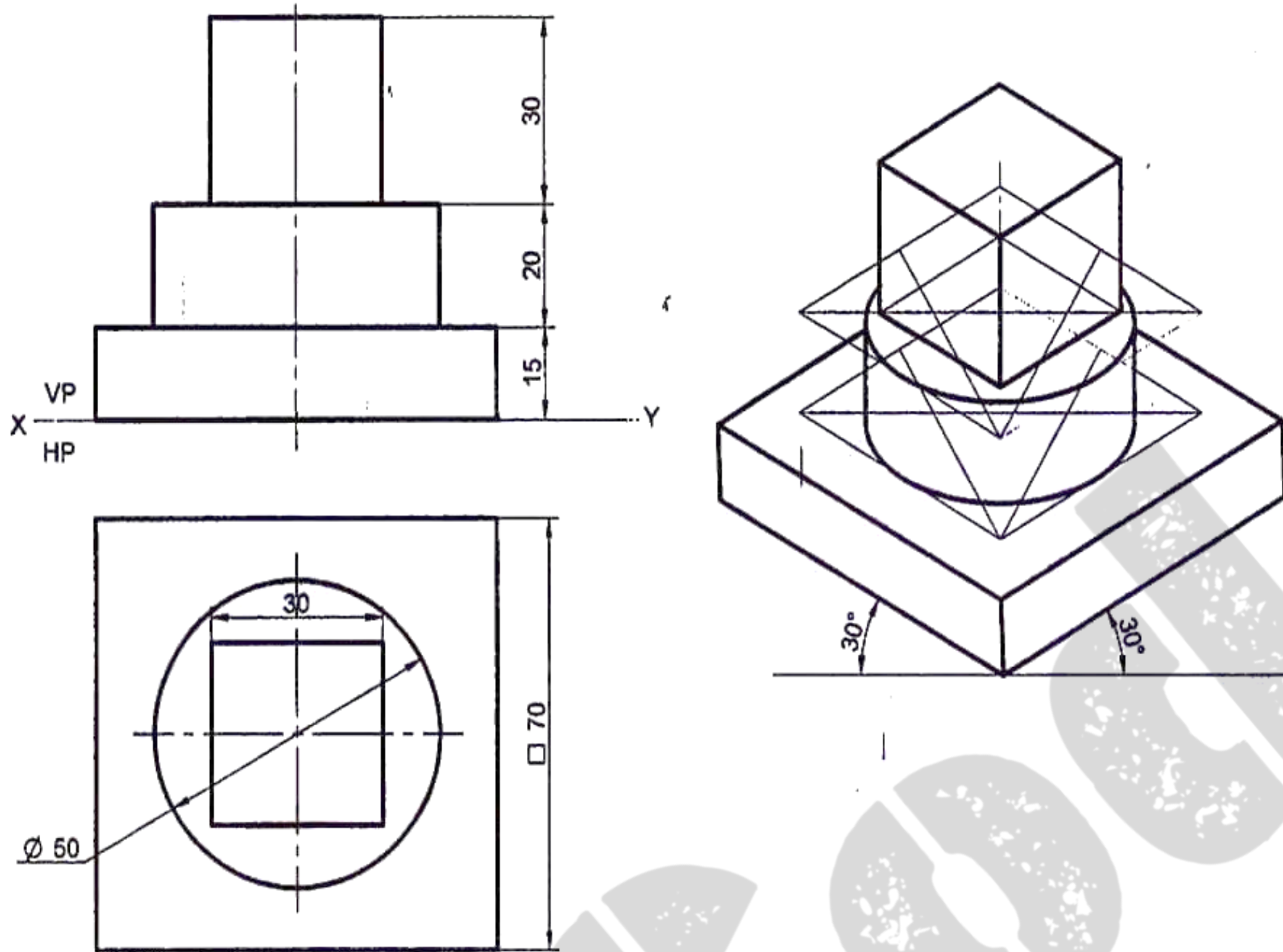
**Solution**





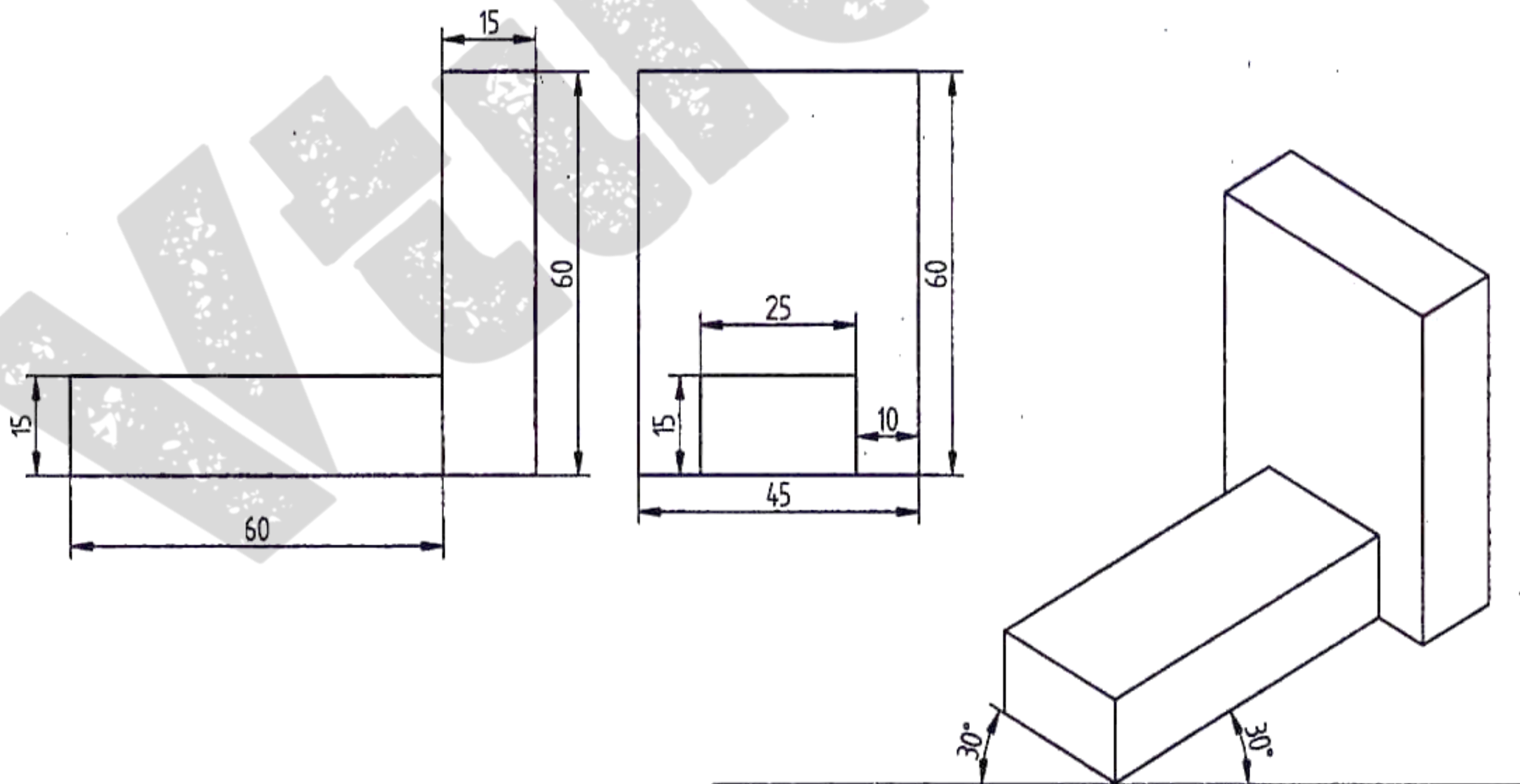
**Problem 31** Following figure shows the front and top views of solid. Draw the Isometric projection of the solid.

**Solution**



**Problem 32** Following figure shows the front and side views of solid. Draw the Isometric projection of the solid.

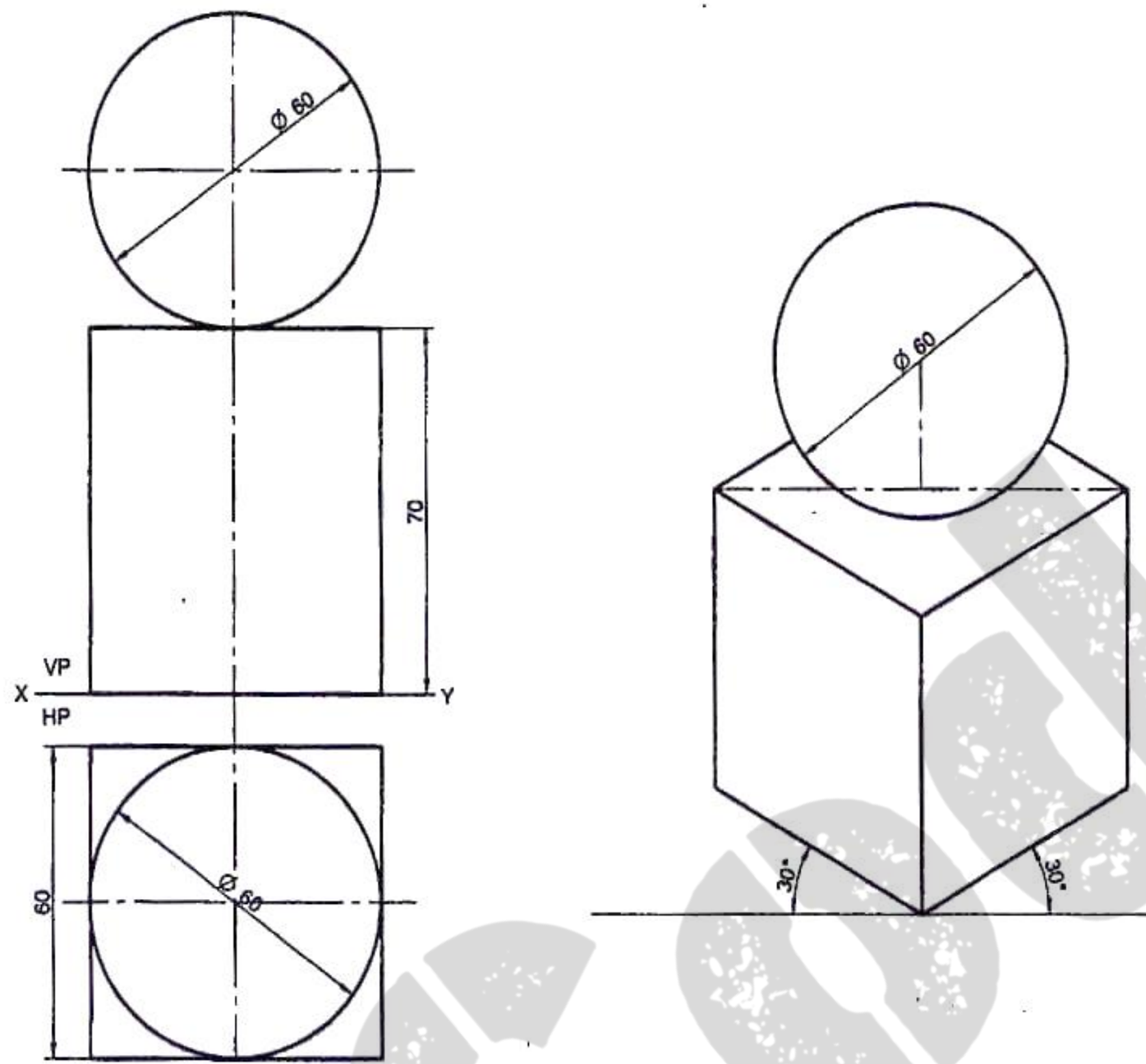
**Solution**





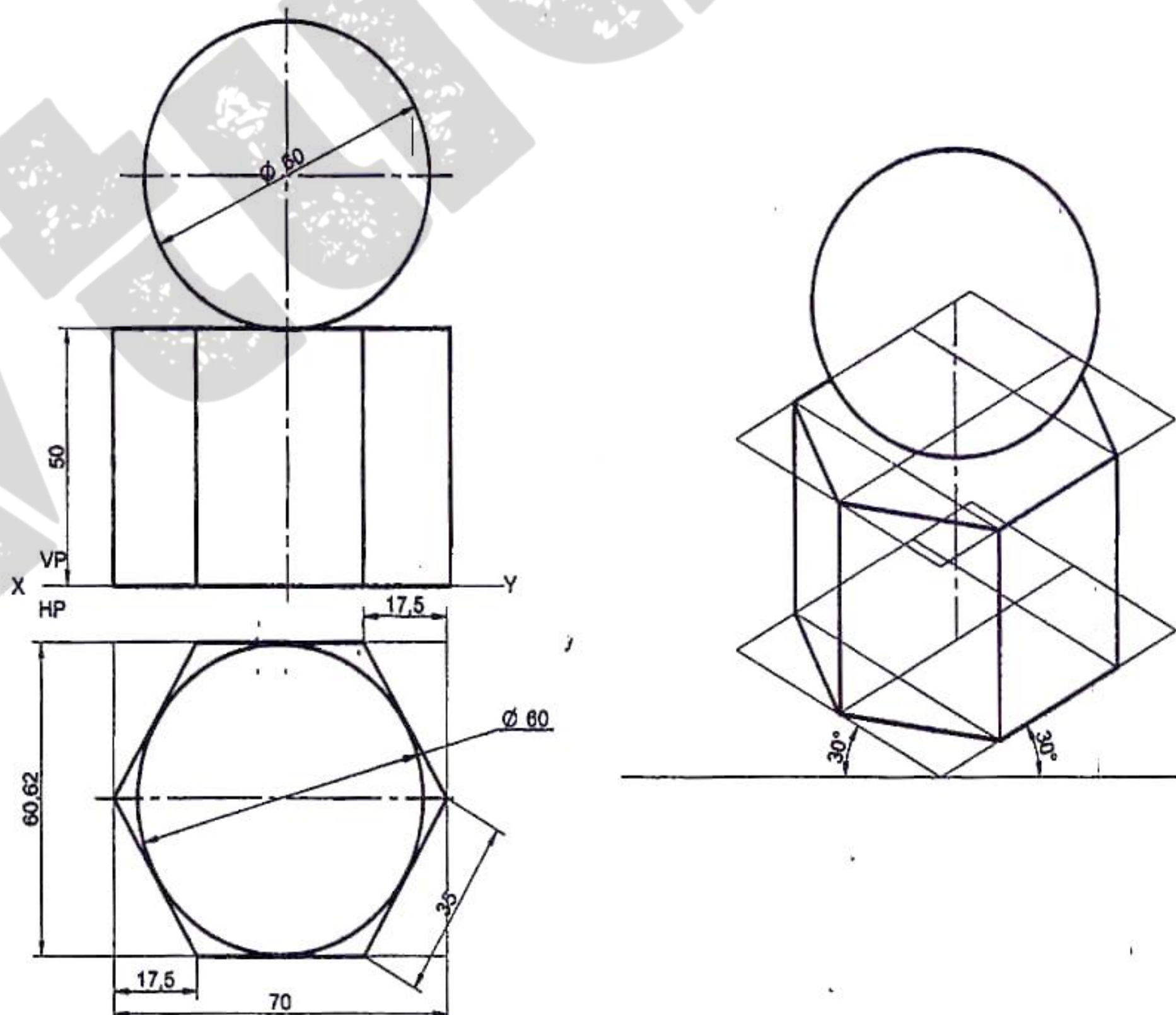
**Problem 33** A sphere diameter 60mm is placed centrally on the top face of a square prism side-60mm and height 70mm. Draw the isometric projection of the combination

**Solution**



**Problem 34** A sphere 60mm is placed centrally on the top face of a hexagonal prism side-35mm and height 50mm. Draw the isometric projection of the combination

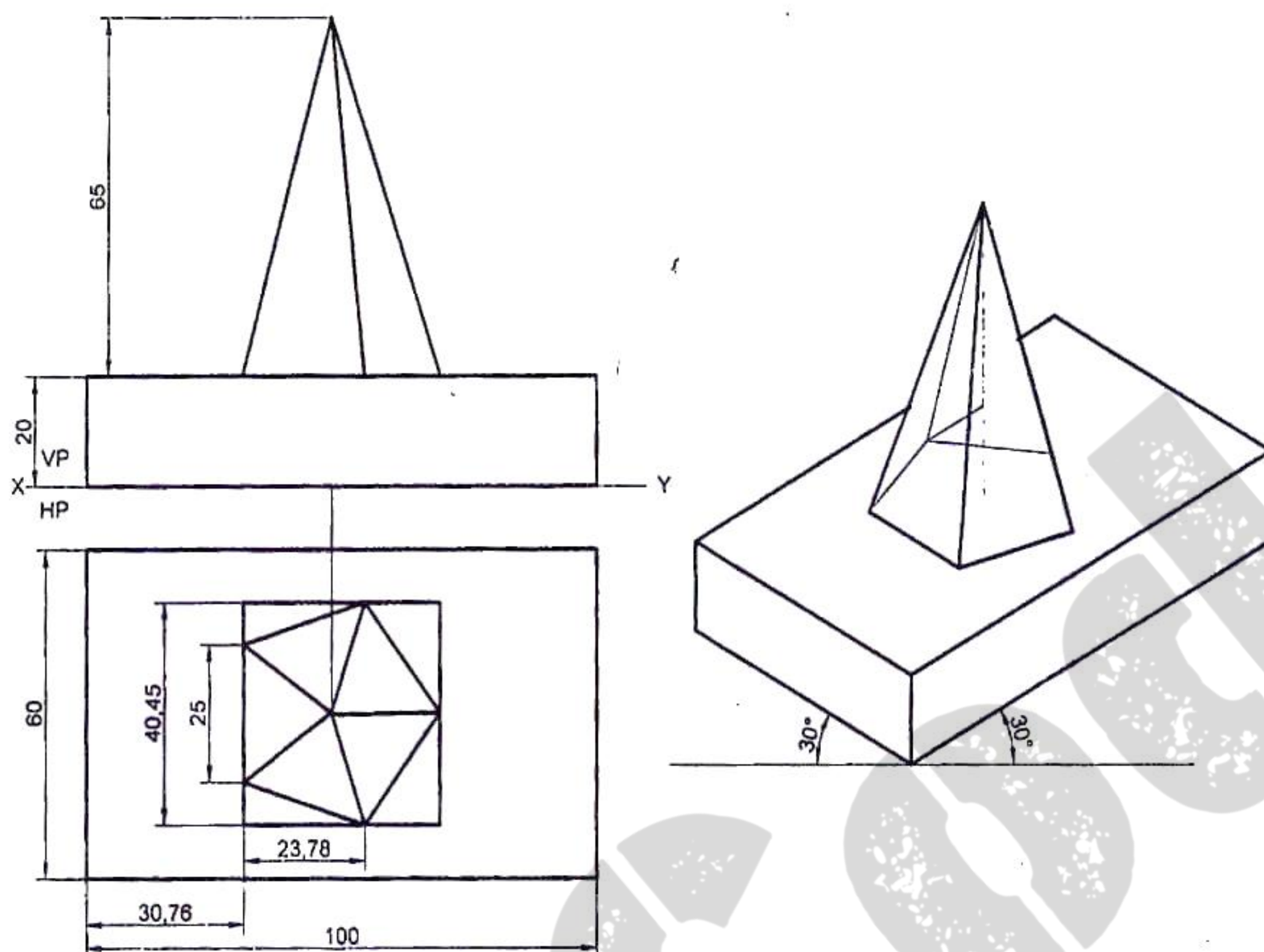
**Solution**





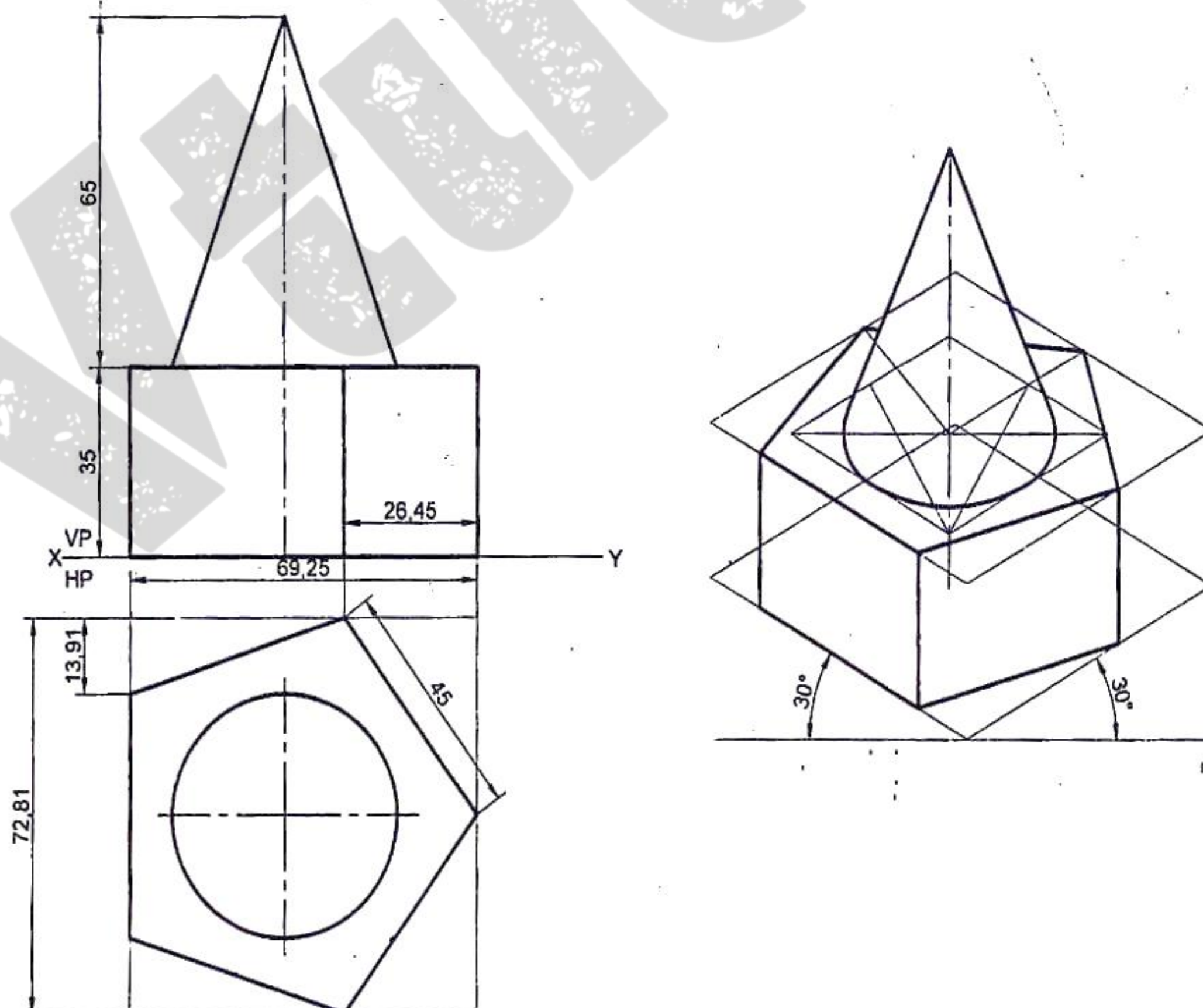
**Problem 35** A pentagonal pyramid base side-25mm and height 65mm is placed centrally on a rectangular slab 100mmx60mm and 20mm-thick. Draw the isometric projection of the combination.

**Solution**



**Problem 36** A cone base diameter 45mm and height 65mm is placed centrally on the top face of a pentagonal prism side-45mm and height 35mm. Draw the isometric projection of the combination.

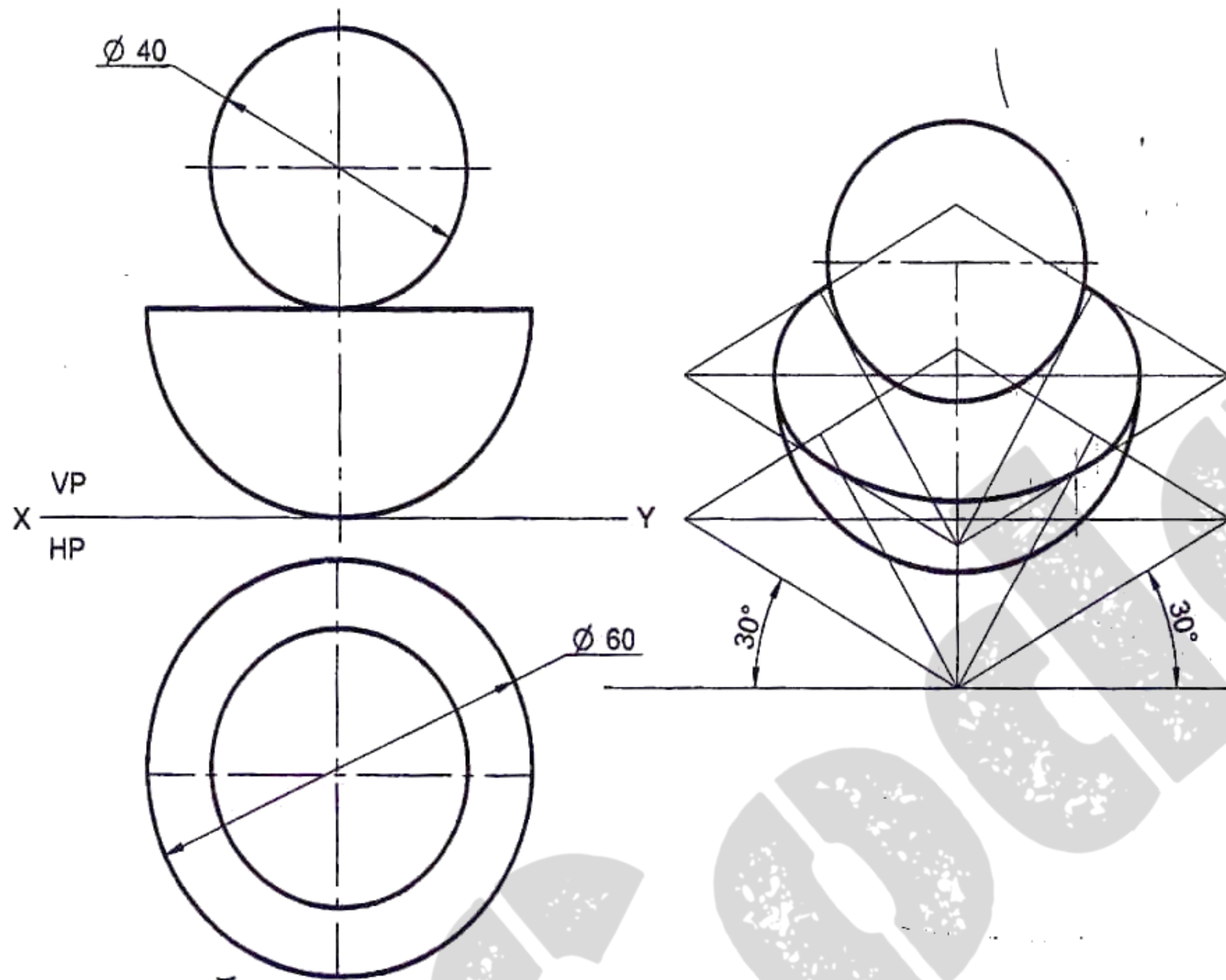
**Solution**





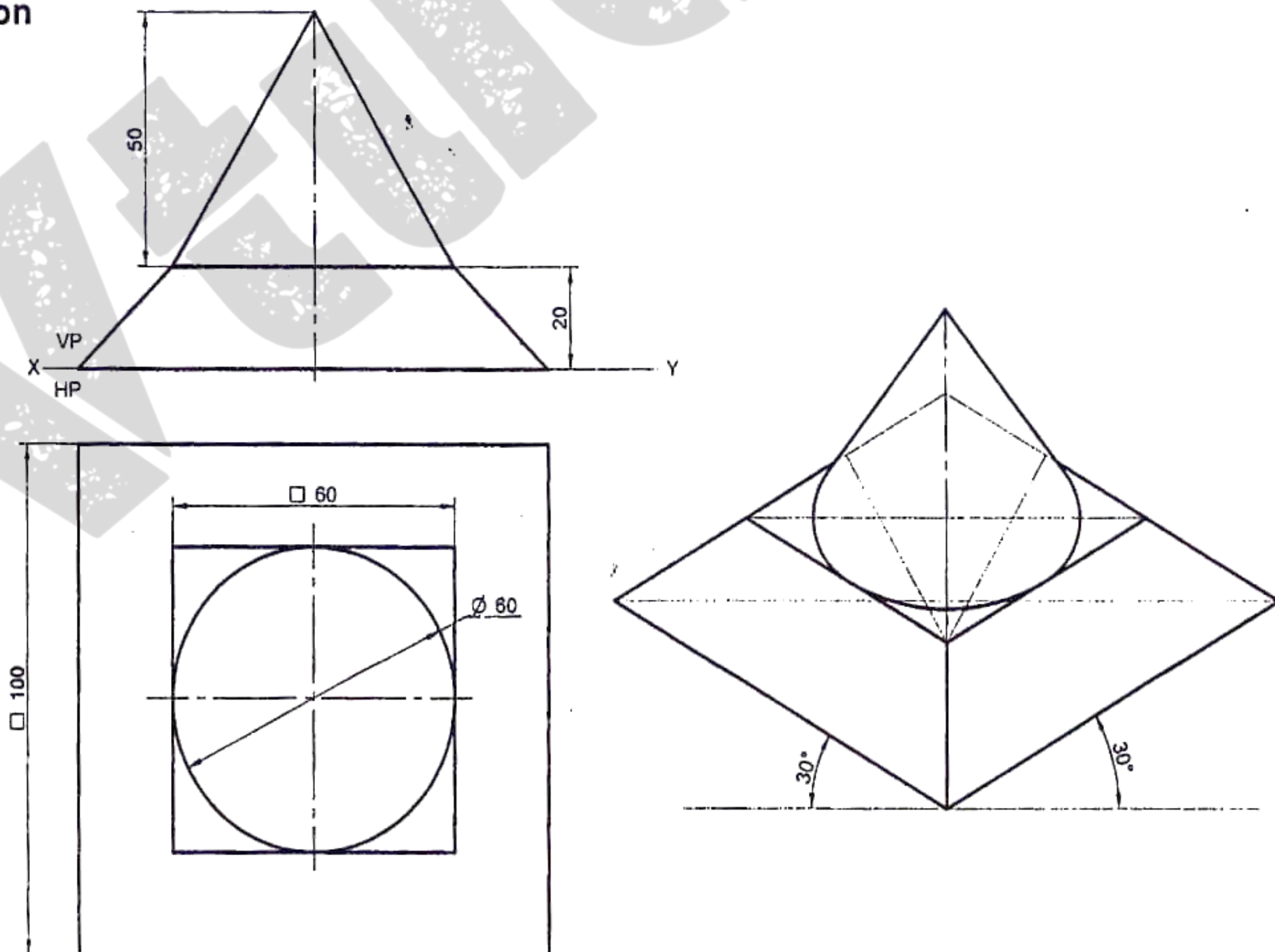
**Problem 37** A sphere diameter 40mm is placed centrally on the flat face of a hemisphere diameter 60mm. Draw the isometric projection of the combination

**Solution**



**Problem 38** A cone of base diameter 60mm, top diameter 40mm and height 50mm is placed centrally on frustum of a square pyramid base side-100mm top face side-60mm and height 20mm. Draw the isometric projection of the combination

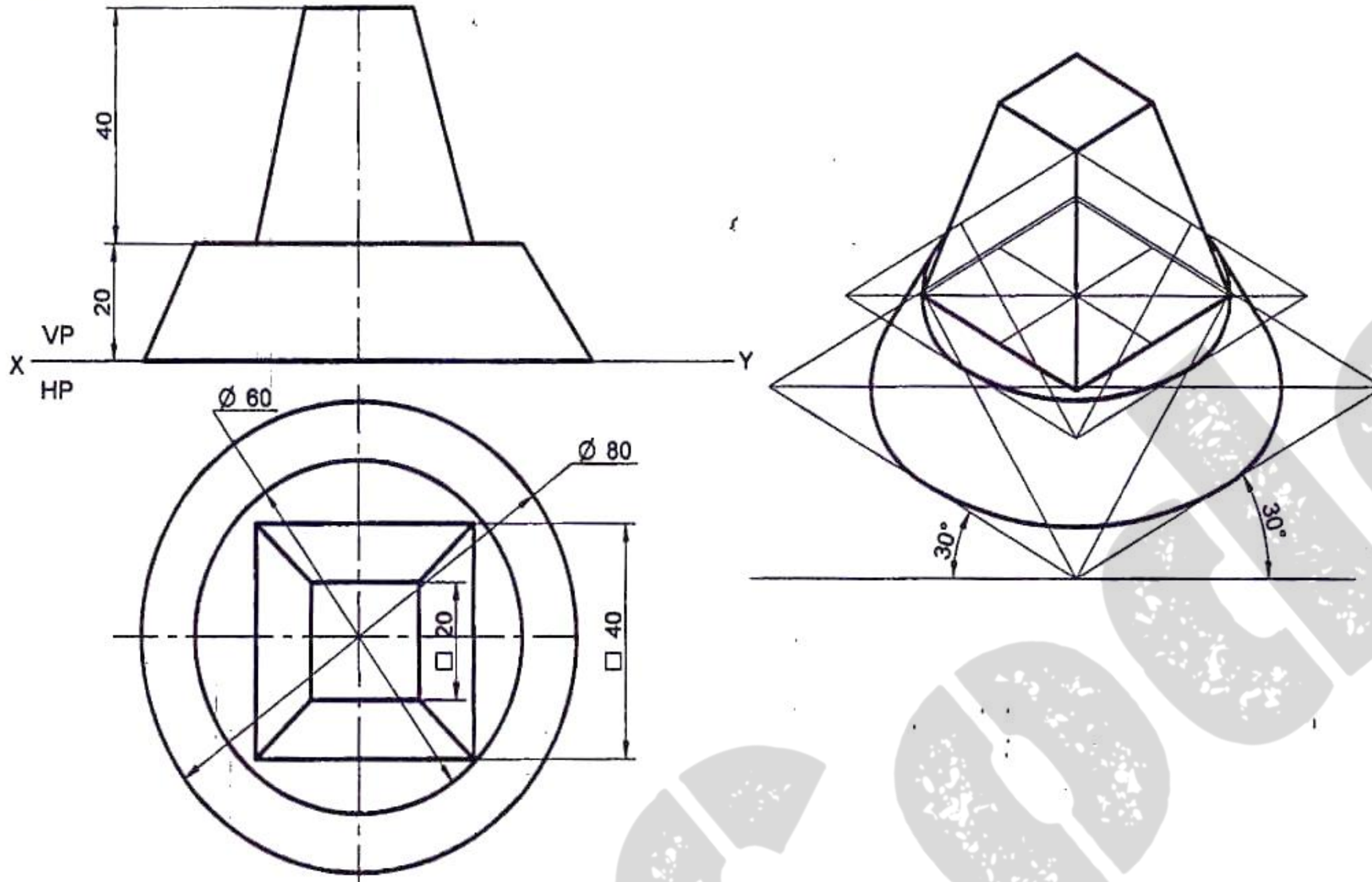
**Solution**





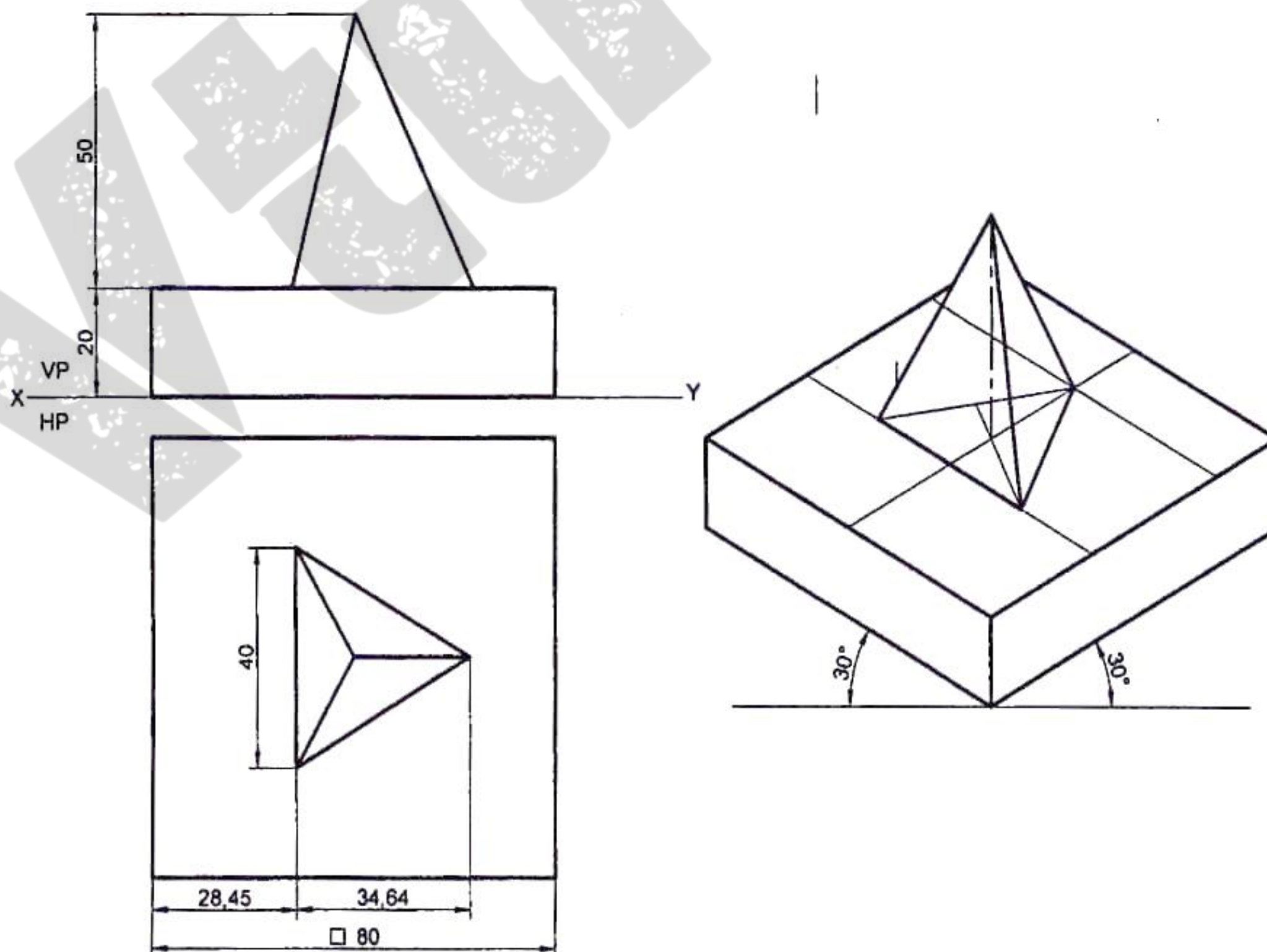
**Problem 39** A frustum of a square pyramid base side-40mm, top face side-20mm and height 40mm is placed centrally on frustum of a cone base diameter 80mm, top diameter 60mm and height 20mm. Draw the isometric projection of the combination

**Solution**



**Problem 40** A triangular pyramid base side-40mm and height 50mm is placed centrally on a square slab side-80mm and 20mm-thick. Draw the isometric projection of the combination

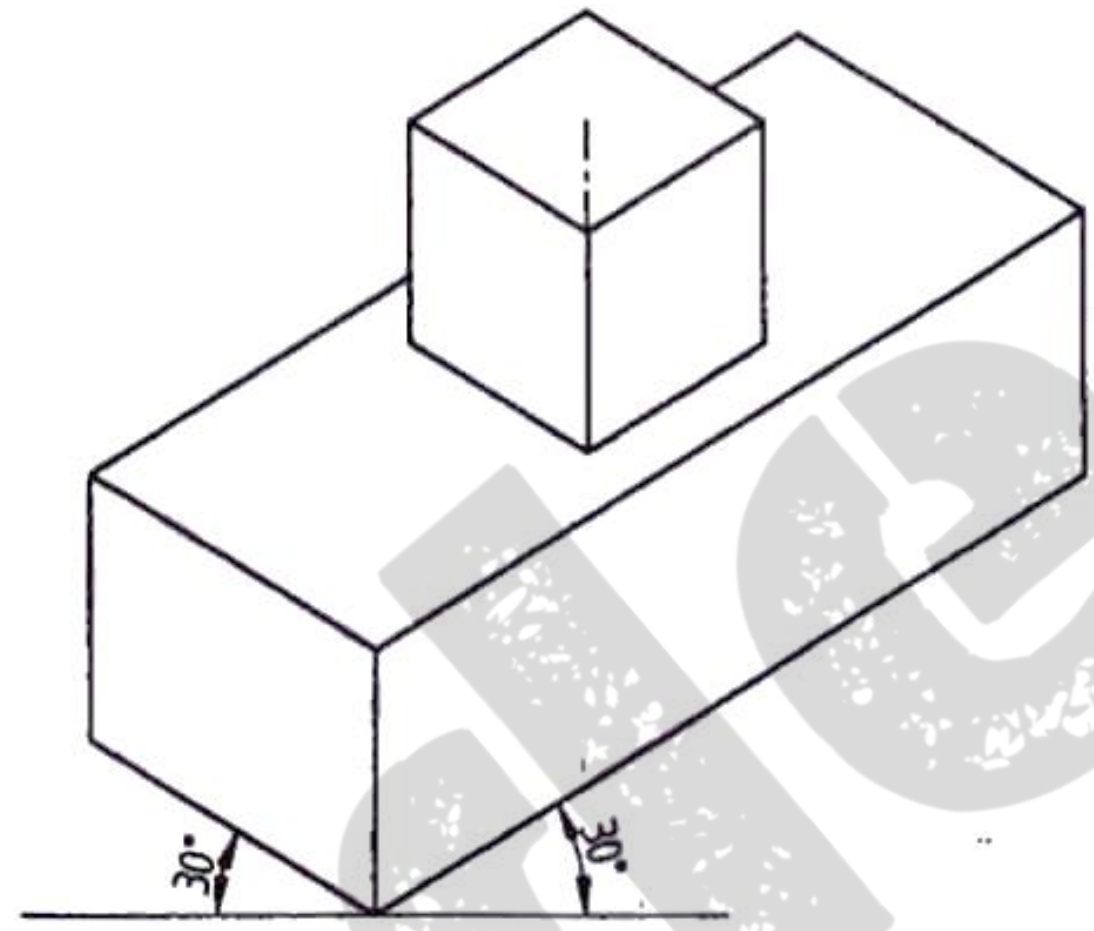
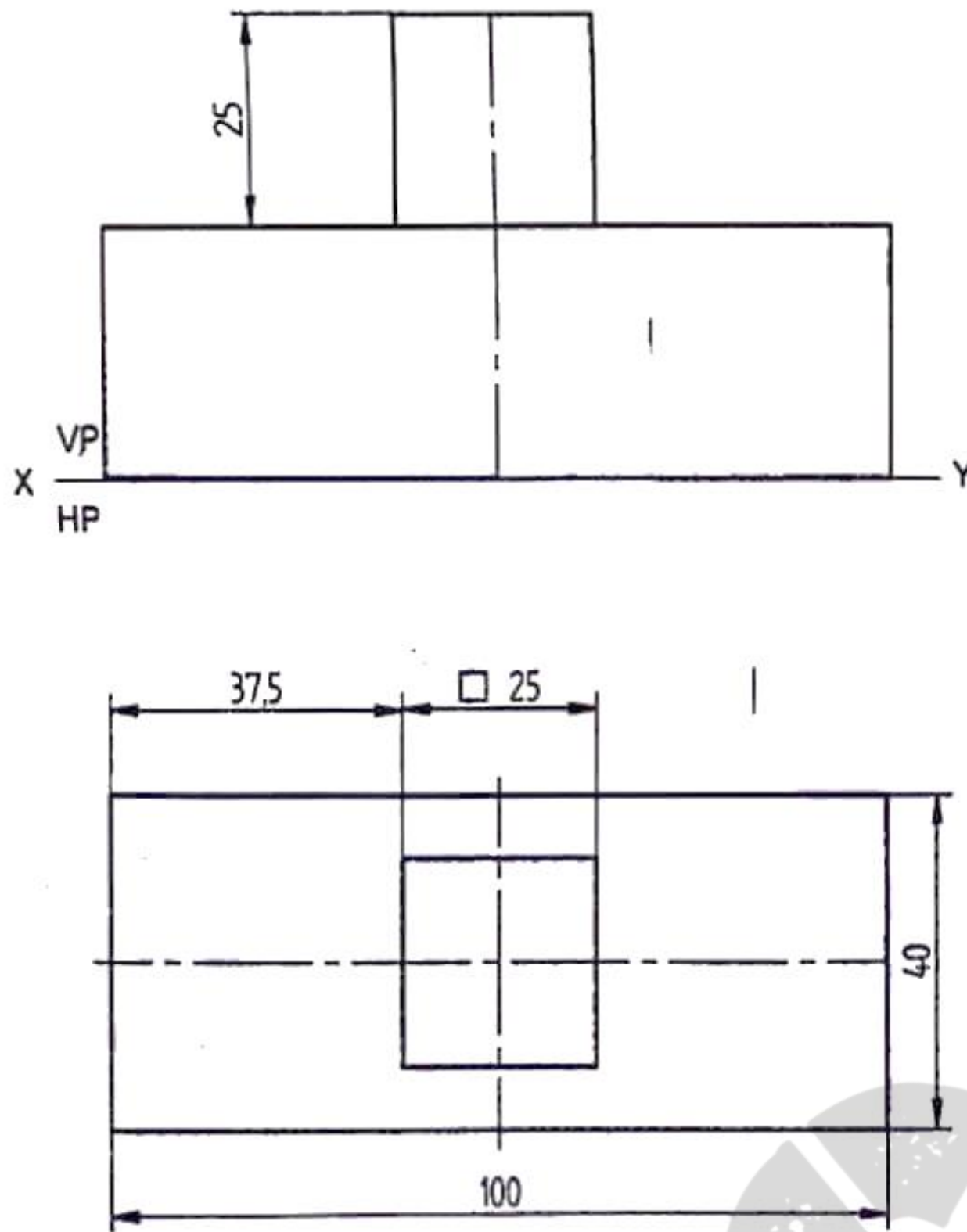
**Solution**





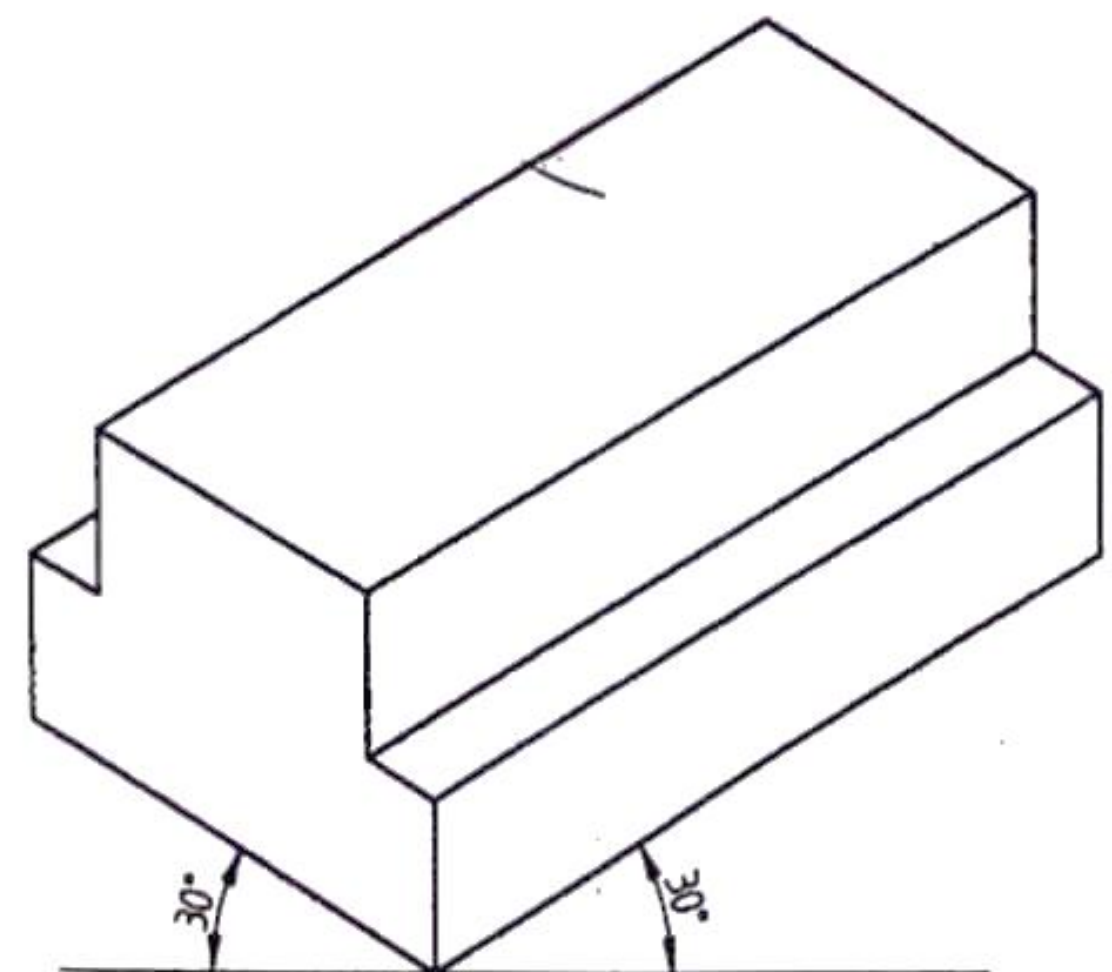
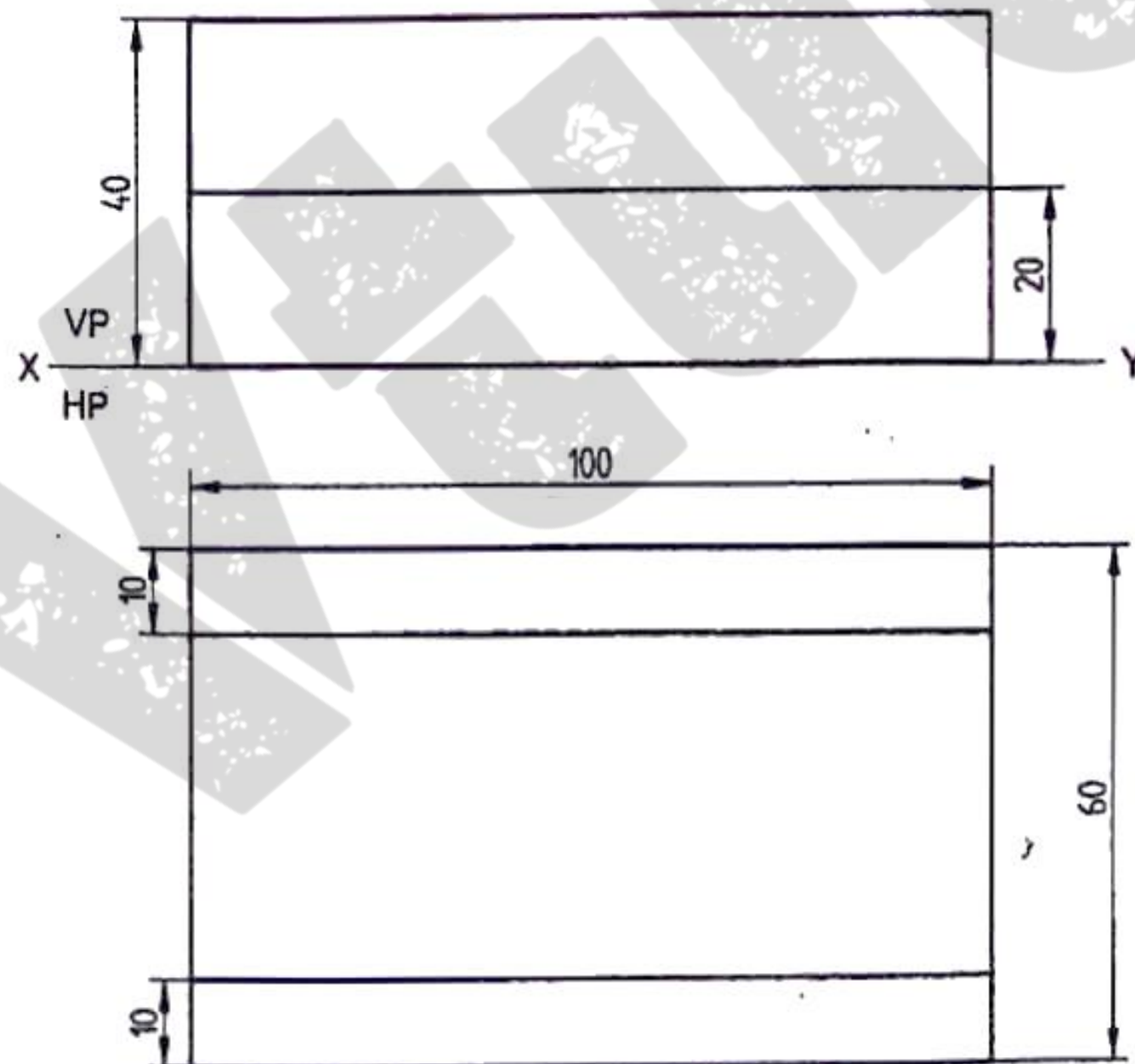
**Problem 41** A cube of side-25mm is resting centrally on a rectangular slab 100mmx40mm and 30mm thick. Draw the isometric projection of the combination

**Solution**



**Problem 42** Two rectangular plates are placed centrally with dimensions (lxbxh) 100mmx60mmx20mm and 100mmx40mmx20mm such that longer edges are parallel. Draw the isometric projection of the combination

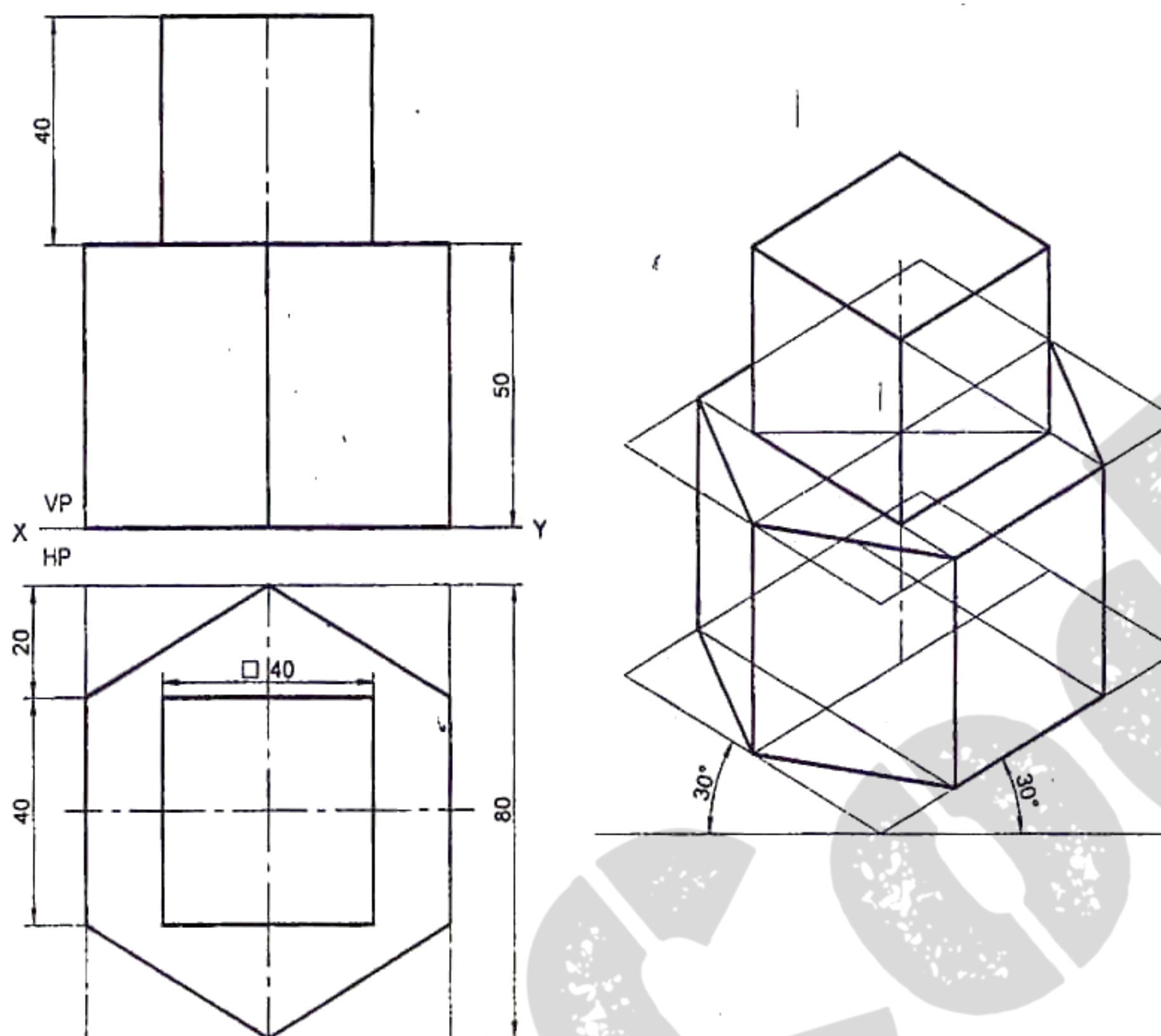
**Solution**





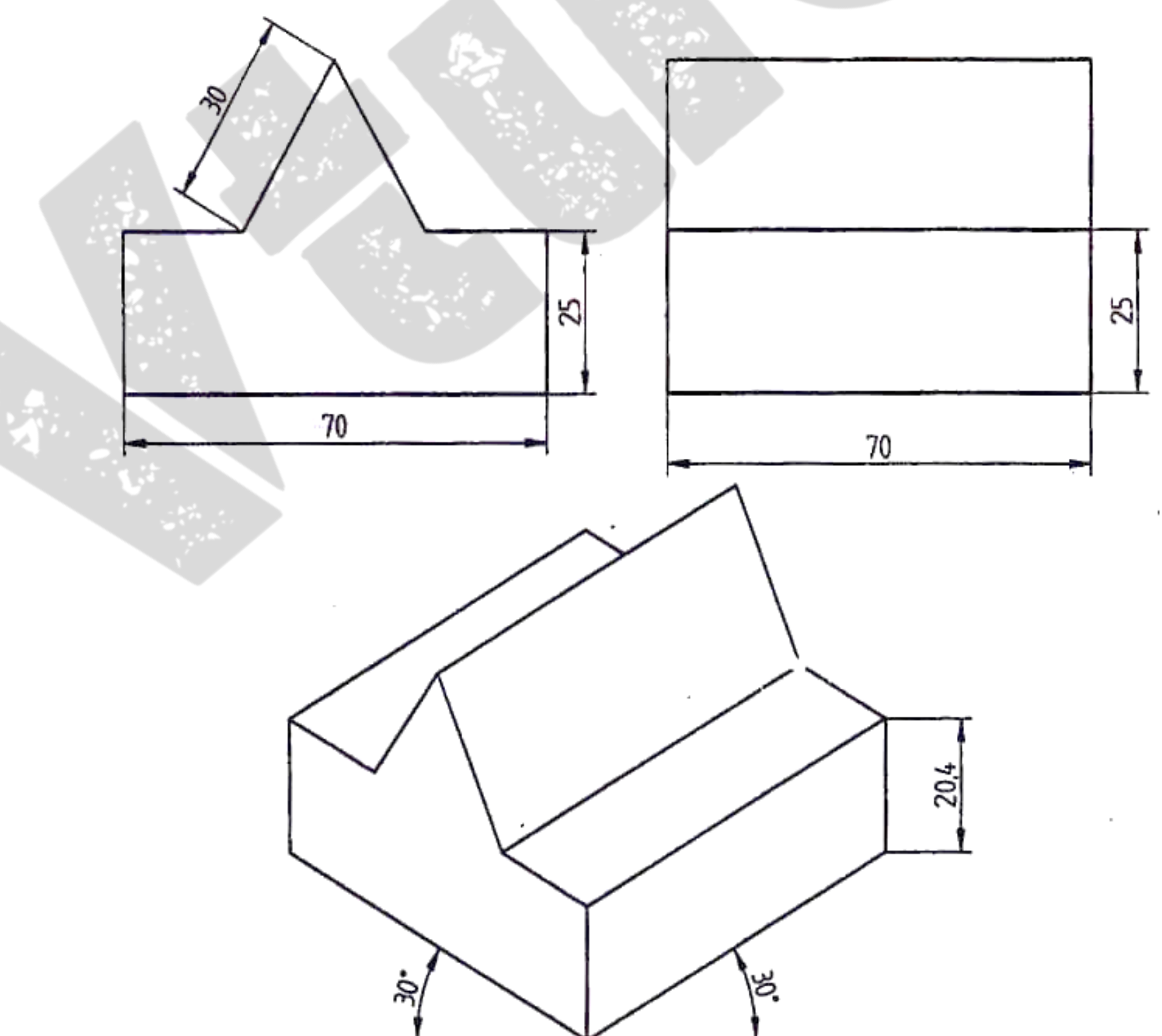
**Problem 43** A cube of side-40mm is resting centrally on a hexagonal prism base side-40mm and height 50mm, such that one of the base sides of the cube is parallel to one of the sides of the top face of the prism. Draw the isometric projection of the combination.

**Solution**



**Problem 44** A triangular prism base side-30mm and length-70mm is resting on its rectangular face on top of a square slab side-70mm and 25mm-thick. Draw the isometric projection of the combination.

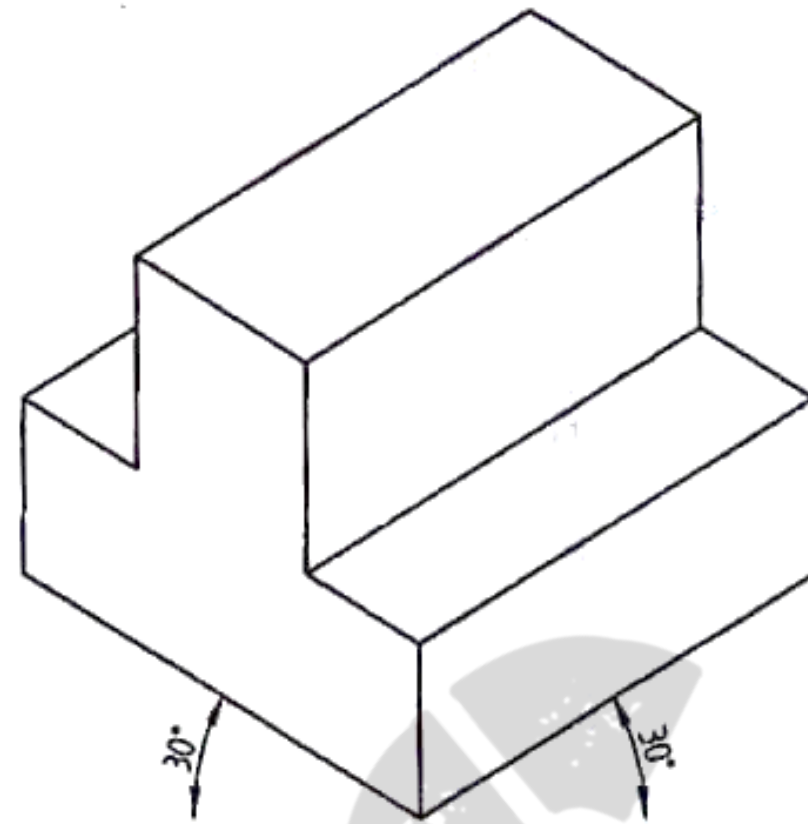
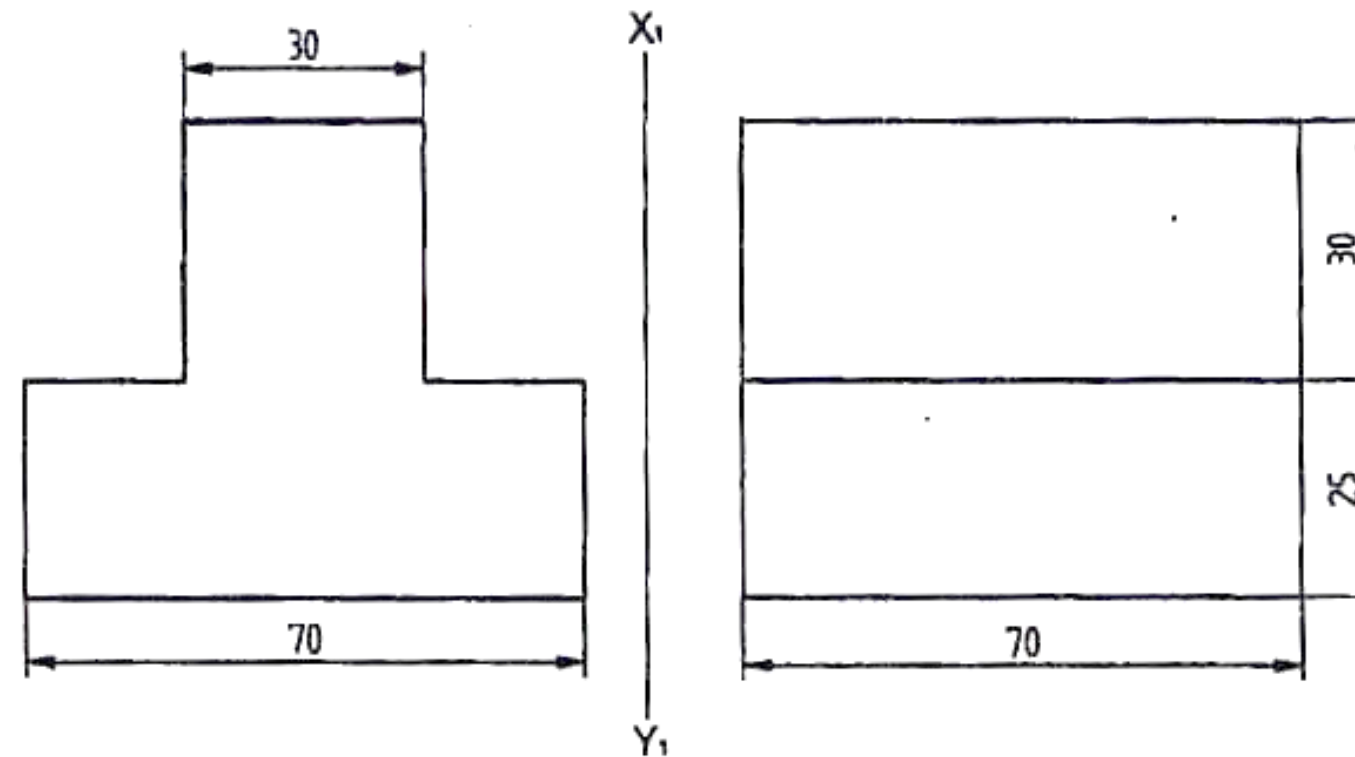
**Solution**





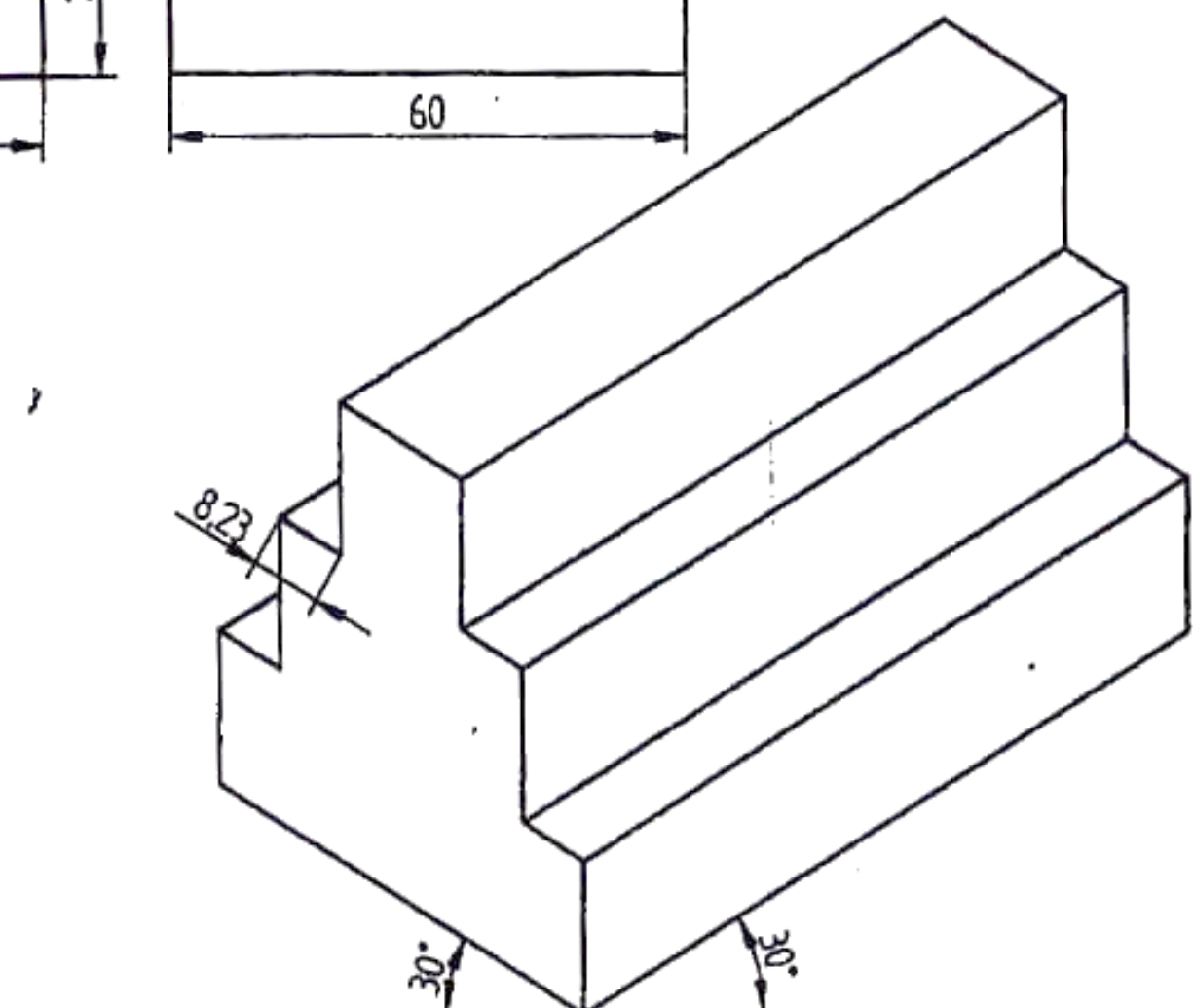
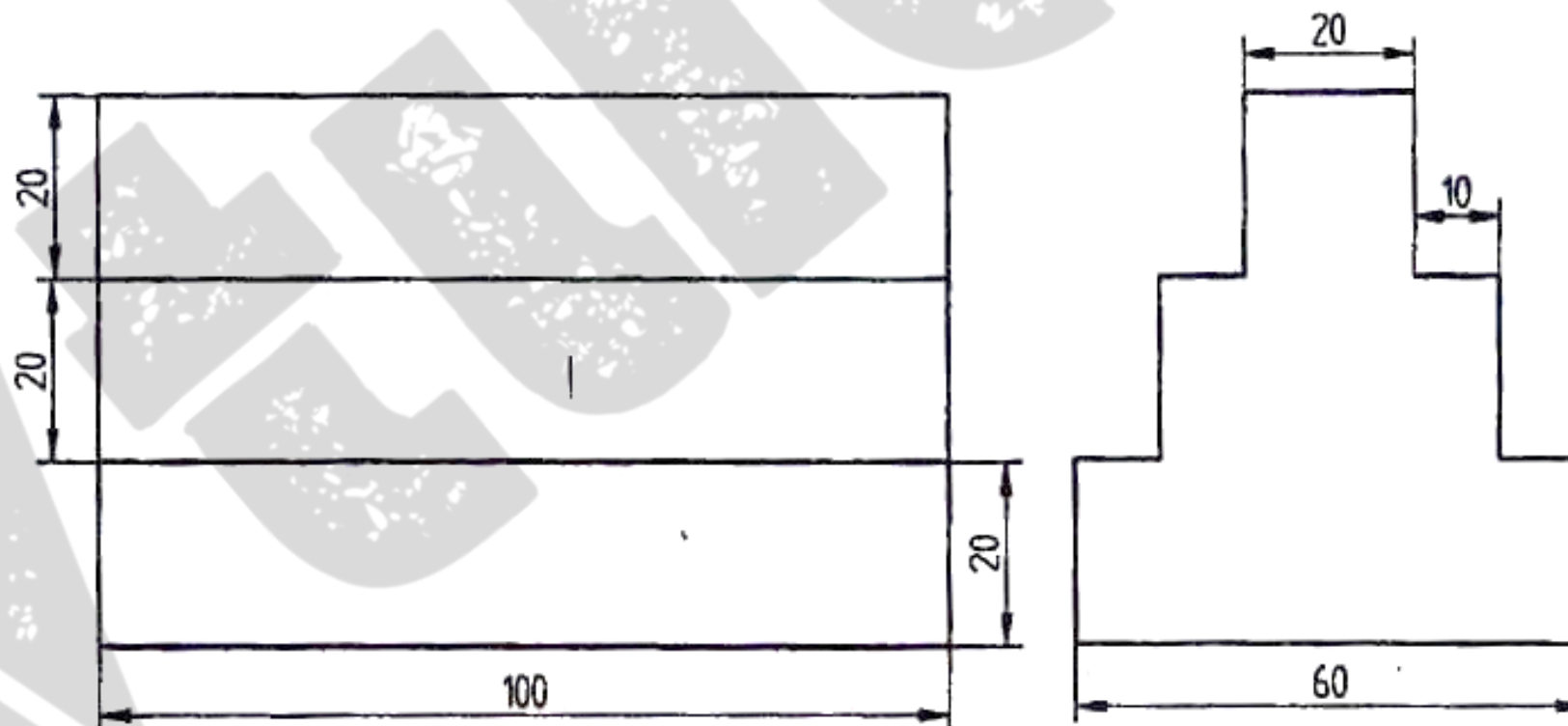
**Problem 45** A square prism of base side-30mm and length-70mm, is resting on its rectangular face on top of a square slab side -70mm and 25mm-thick. Draw the isometric projection of the combination

**Solution**



**Problem 46** Three rectangular slabs (lxbxh) 100mmx60mmx20mm 100mmx40mmx20mm and 100mmx20mmx20mm are placed one above the other in the ascending order of their width-b, such that their longer axes are co-planar. Draw the isometric projection of the combination

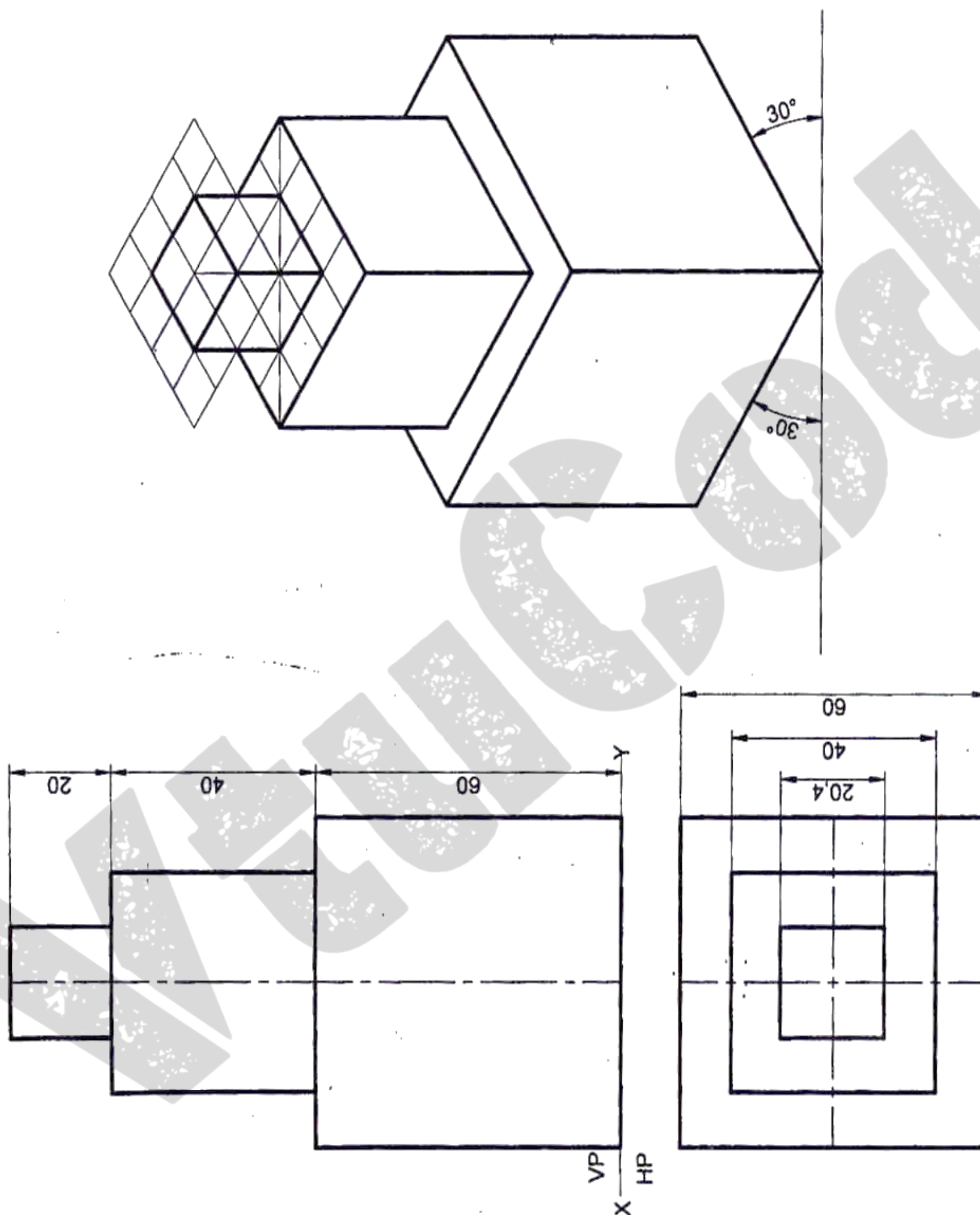
**Solution**





**Problem 47** Three cubes of sides 60mm, 40mm and 20mm are placed centrally one above the other in the ascending order of their side. Draw the isometric projection of the combination

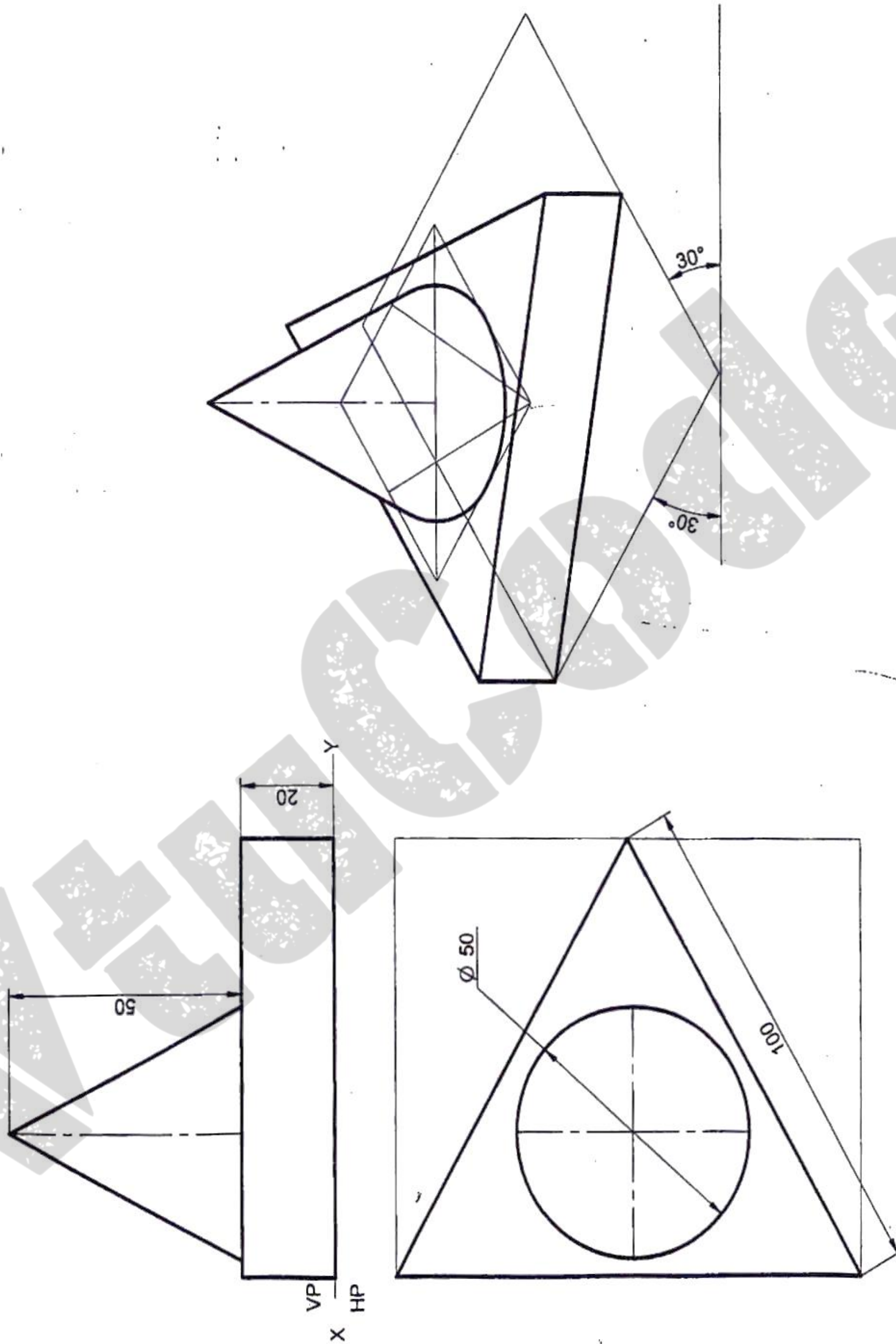
**Solution**





**Problem 48** A cone of base diameter 50mm and height 60mm is placed centrally on an equilateral triangular prism of side-100mm and 20mm thick Draw the isometric projection of the combination

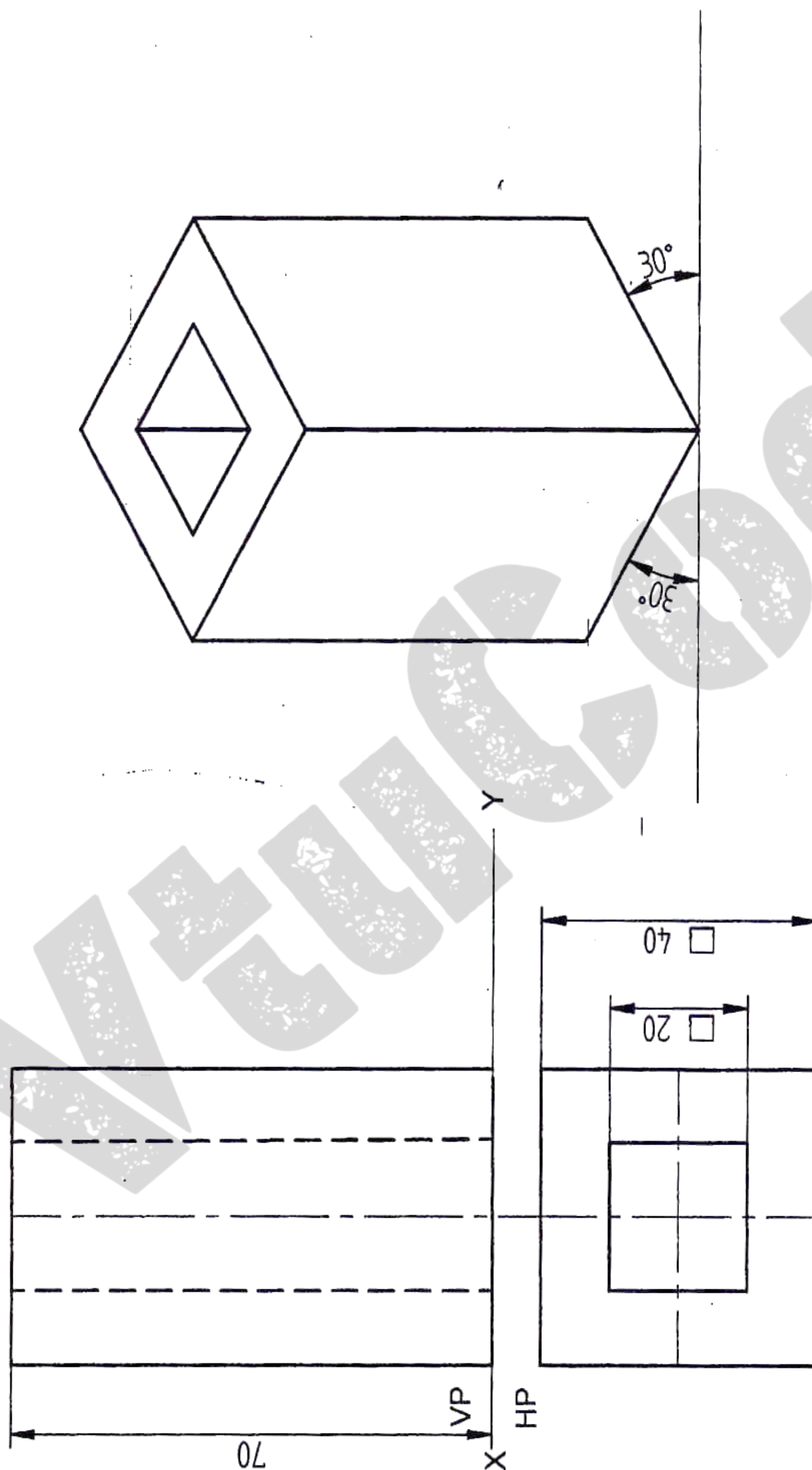
**Solution**





**Problem 49** A square prism side-40mm and height 70mm has a full depth co-axial square hole side-20mm, such that edges of both the squares are parallel. Draw the isometric projection of the combination

**Solution**





**Problem 50** A rectangular slab base-100mmx80mm and height 30mm has a full depth co-axial square hole side-40mm, such that one of the sides of the square is parallel to one of the sides of the rectangle. Draw the isometric projection of the combination

**Solution**

