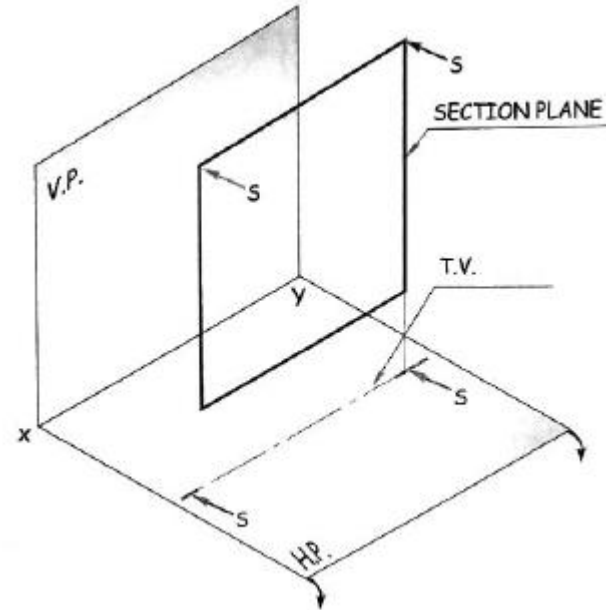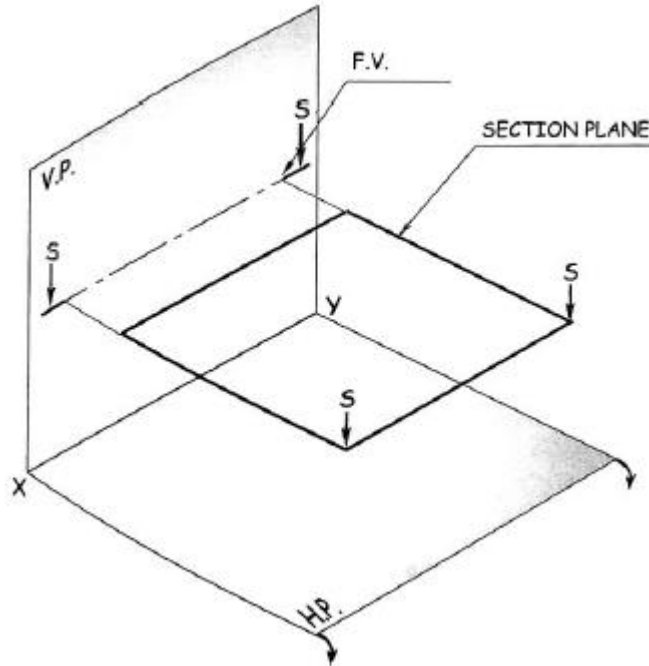# 111U06C105 – Engineering Drawing

Module
Section of Solids

Types of Section planes
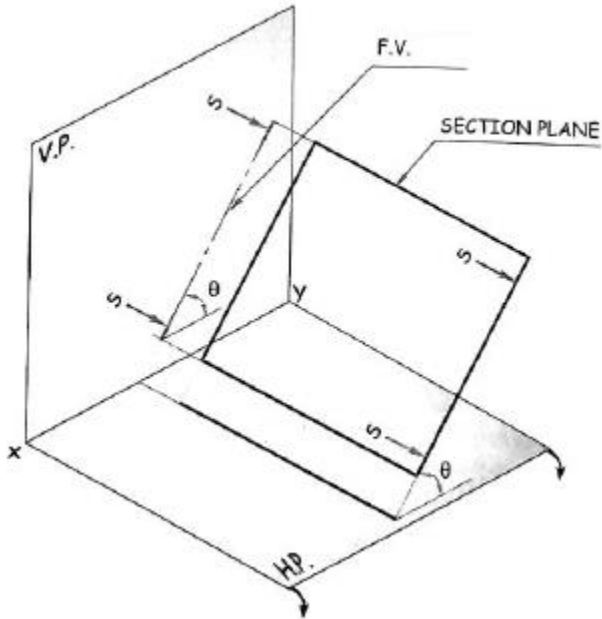
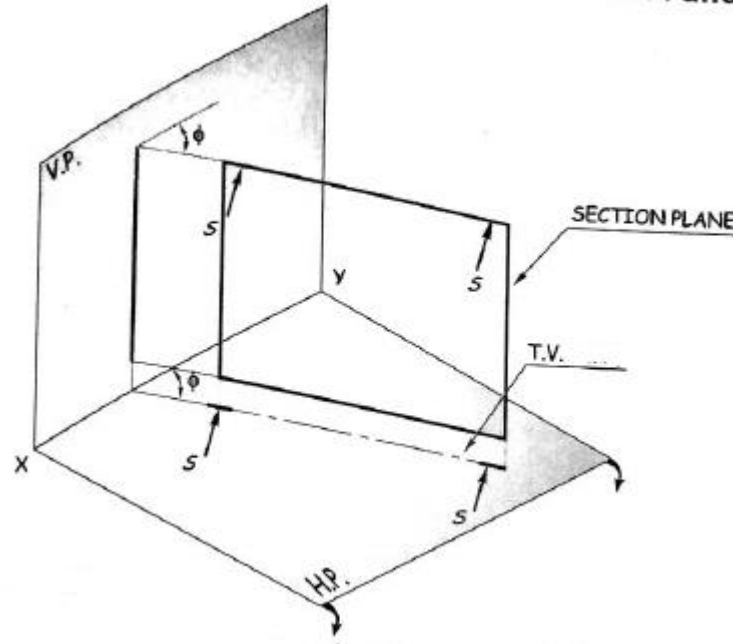**Section Plane Perpendicular to V.P. and Parallel to H.P**   Section plane perpendicular to H.P. and Parallel to V.P.
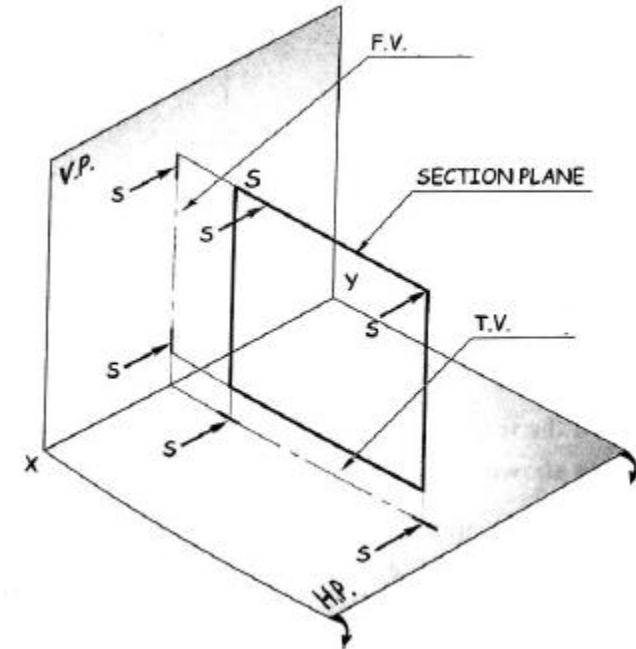
Types of Section planes

Section plane perpendicular to V.P. inclined to H.P.

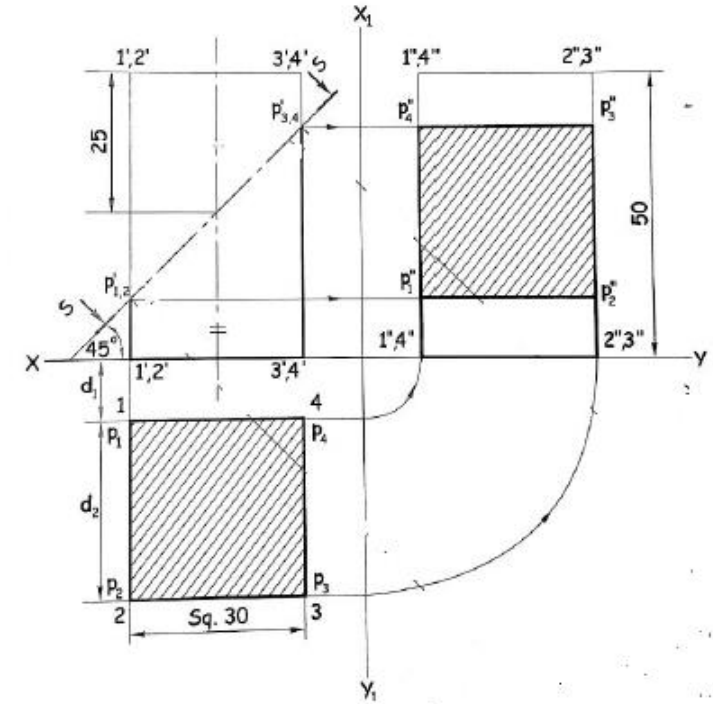Section plane perpendicular to H.P. inclined to V.P.

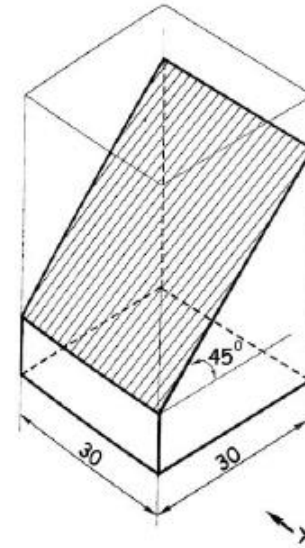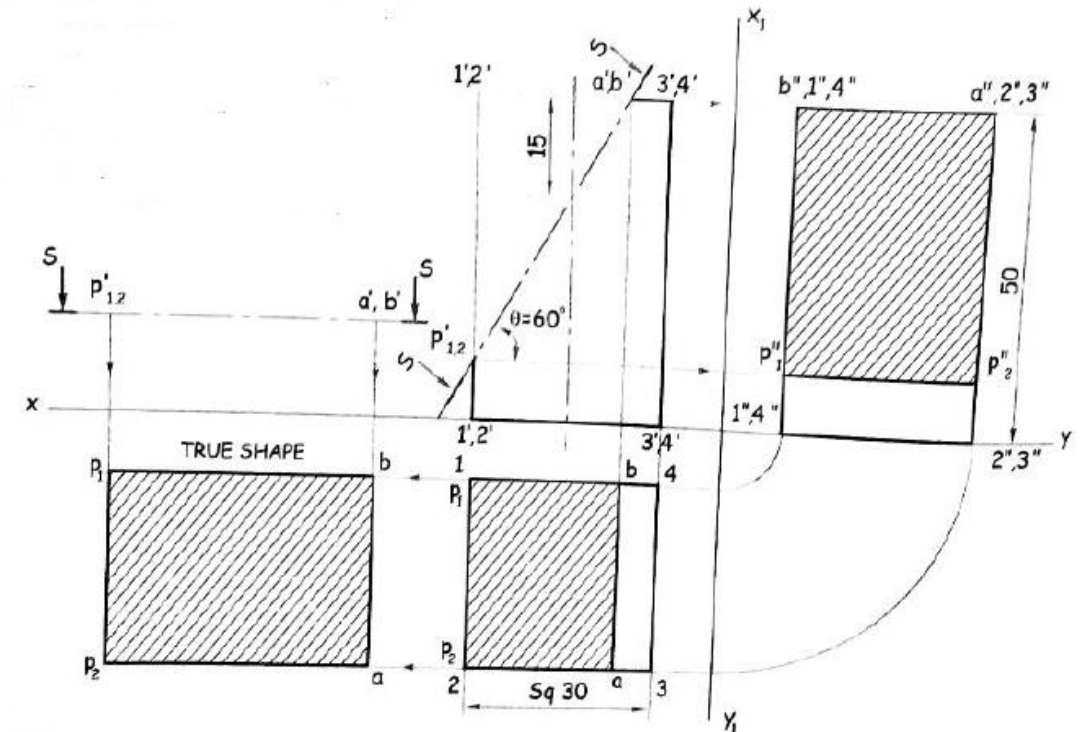Section plane perpendicular to both H.P. and V.P.

A square prism side of base 30 mm, axis height 50 mm has its base in the H.P. with two sides of base parallel to the V.P. It is cut by an auxiliary inclined plane (A.I.P.). which bisects the axis and makes an angle 45° to the H.P. Draw the projection of F.V., sectional T.V., sectional S.V. and the true shape of a section. *(Use first angle method.)*

Solution

A square prism side of base 30 mm, axis height 50 mm stands vertical on the H P. with the sides of a base perpendicular to the V.P. A section plane perpendicular to the V.P. and inclined at 60° to the H.P. cuts the prism, which passes through the point on the axis at a distance of 15 mm from the top base. Draw the projection of F.V., sectional T.V., sectional S.V. and the true shape of a section.

A square pyramid side of base 30 mm, axis length 50 mm has its base in the H.P. and two of its side of base perpendicular to the V.P. A section plane cuts the pyramid such that it is perpendicular to the V.P. and inclined at 60° to the H.P. and passes through the point on the axis 15 mm above the base of a pyramid. Draw the F.V., sectional T.V., sectional S.V. and the true shape of a section.

Solution
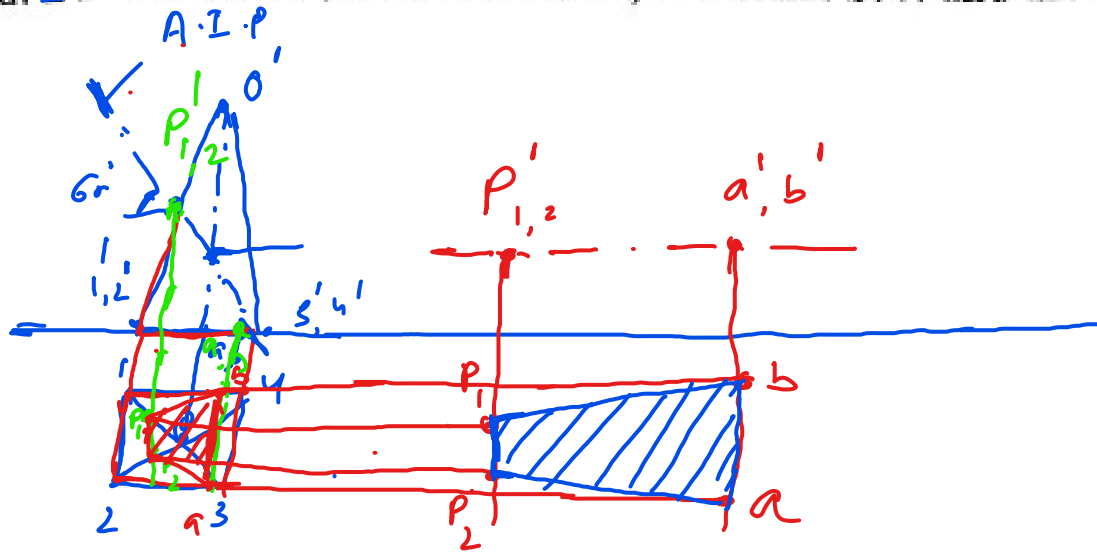
TRUE SHAPE OF SECTION
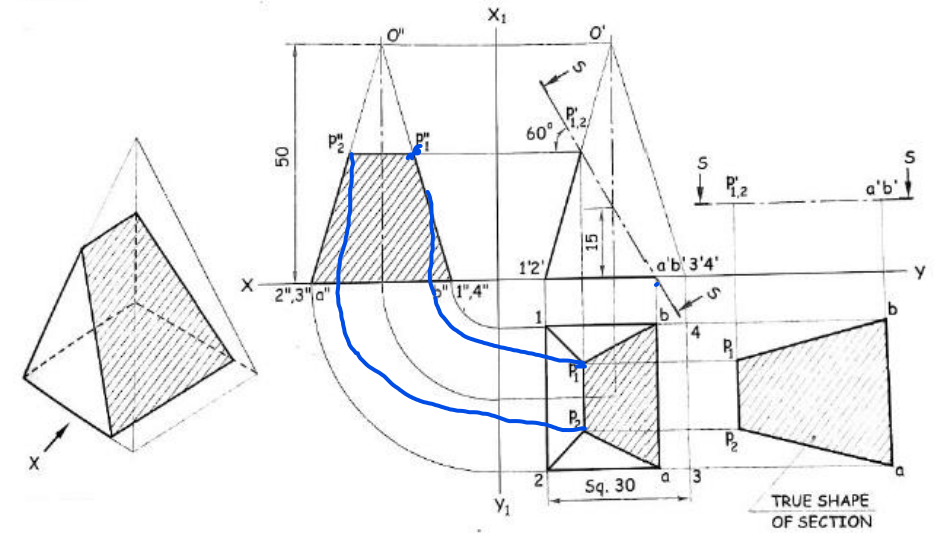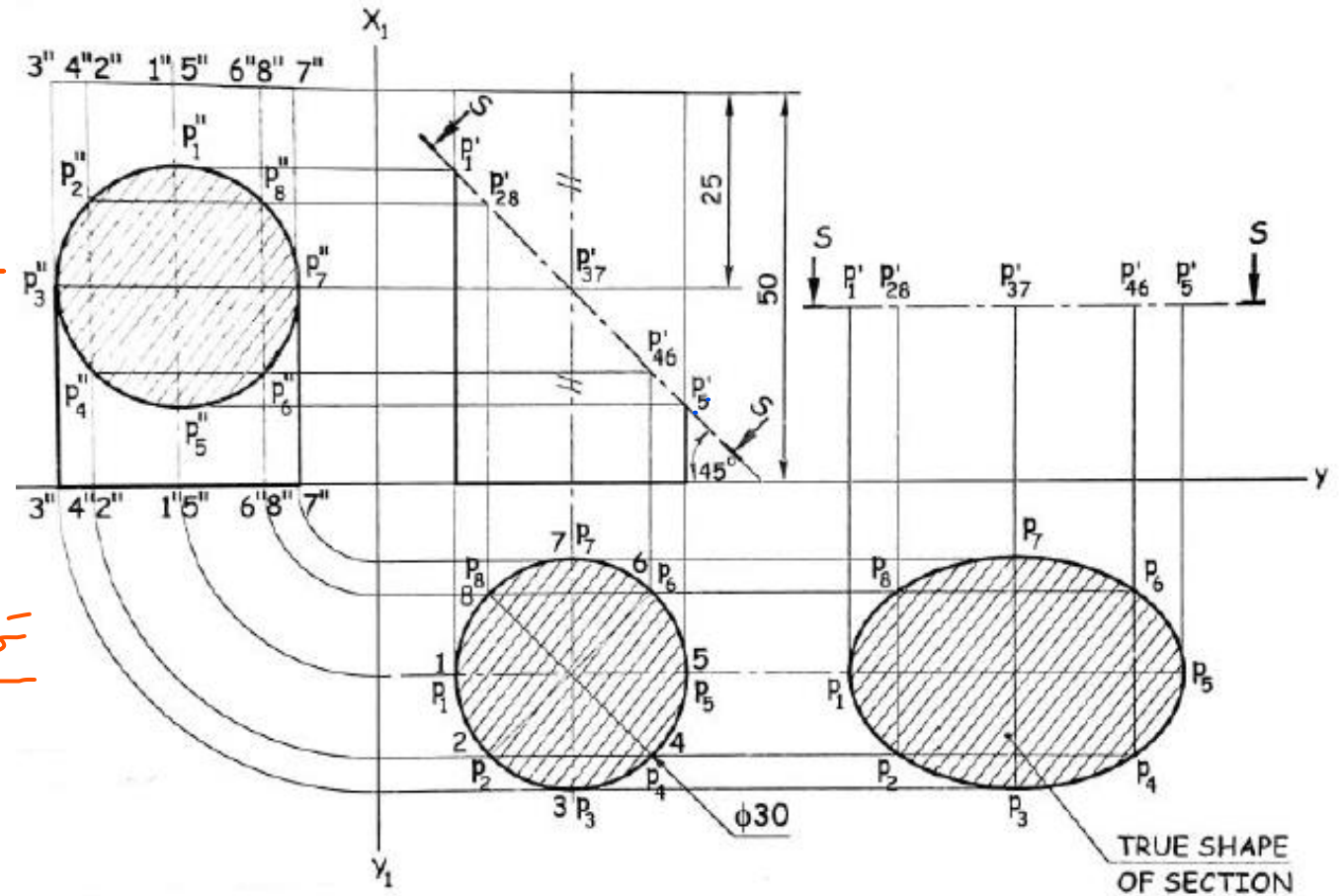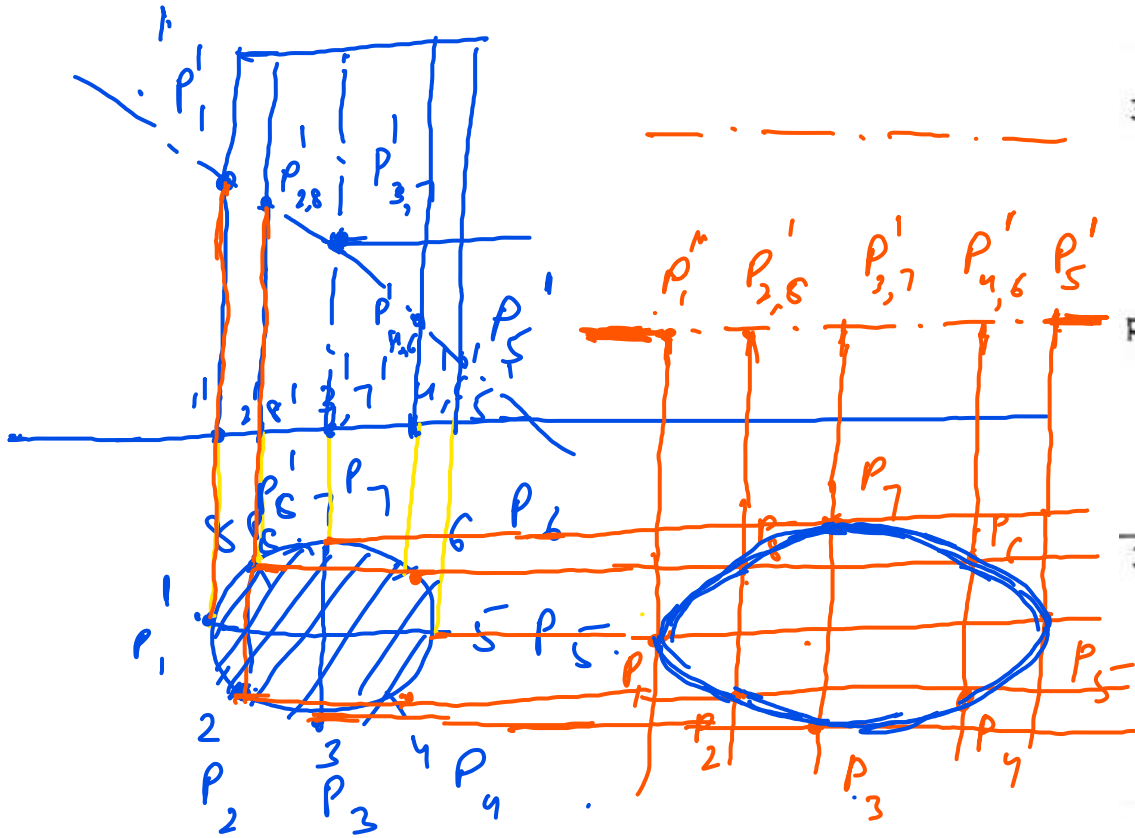
A cylinder of 30mm diameter and 50 mm long stands vertically on its circular base. It is cut by an A.I.P inclined at 45° to the H.P. which bisect a axis of a cylinder. Draw the sectional T.V. , F.V., sectional S.V. and true shape of the section.

TRUE SHAPE
OF SECTION

A cone, diameter of base 70 mm and axis 60 mm long is resting on its base on the ground. It is cut by a section plane perpendicular to V.P. and inclined to H.P. such that the true shape of the section is an isosceles triangle of height 65 mm. Draw the front view, sectional top view, sectional side view and true shape of the section. Also measure the base of the triangle and angle made by the cutting plane to H.P.

Solution
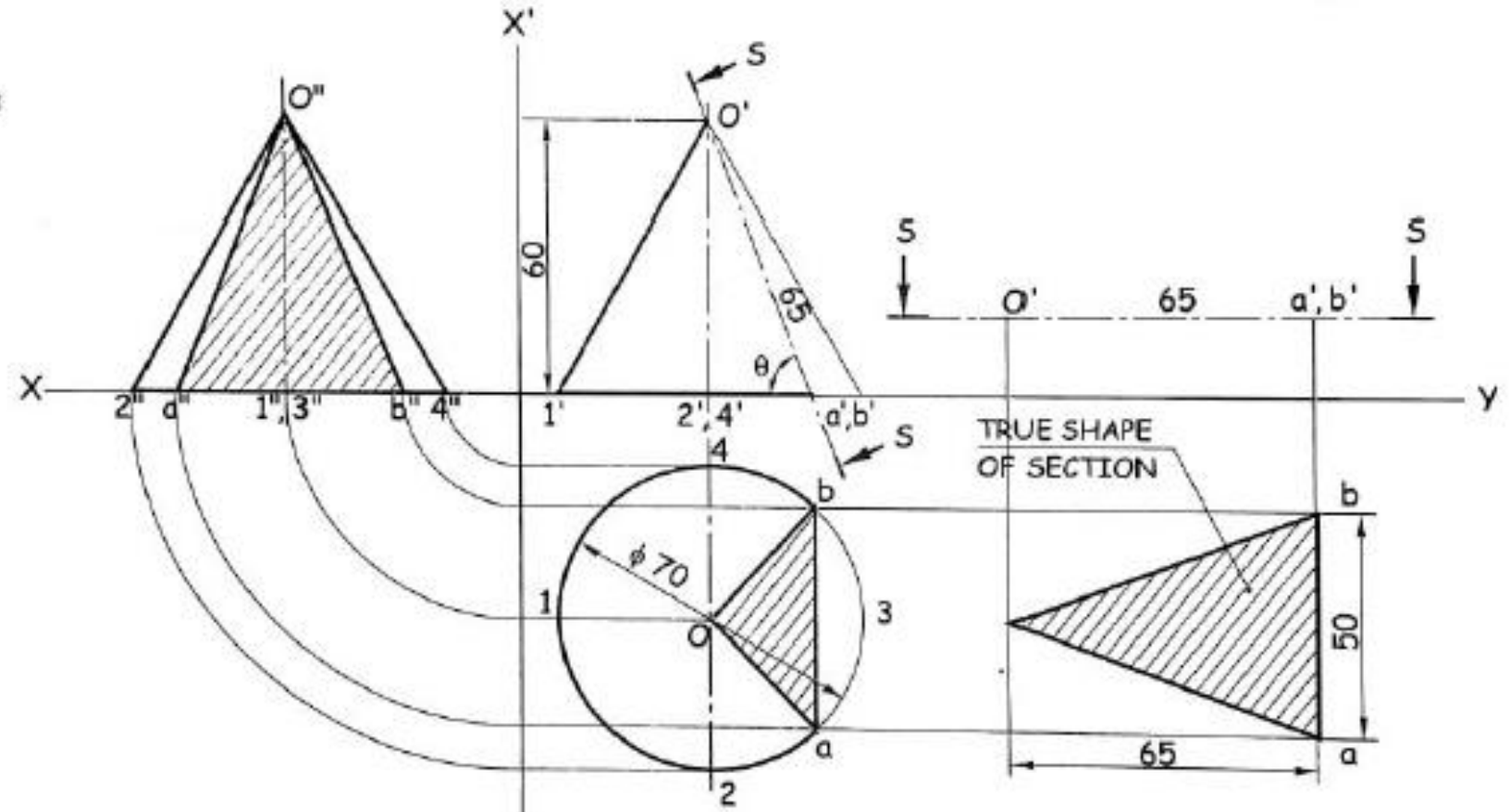
A cone, base diameter 40 mm and height 50 mm is resting on its base on the H.P. It is cut by a plane inclined to the H.P. and perpendicular to the V.P. such that the true shape of a section is an isosceles triangle of base 30 mm. Draw the F.V., sectional S.V., sectional T.V. Measure the inclination of a cutting plane with the H.P.

Solution

FIG 7.41 (a)

TRUE SHAPE OF SECTION
ISOSCELES TRIANGLE
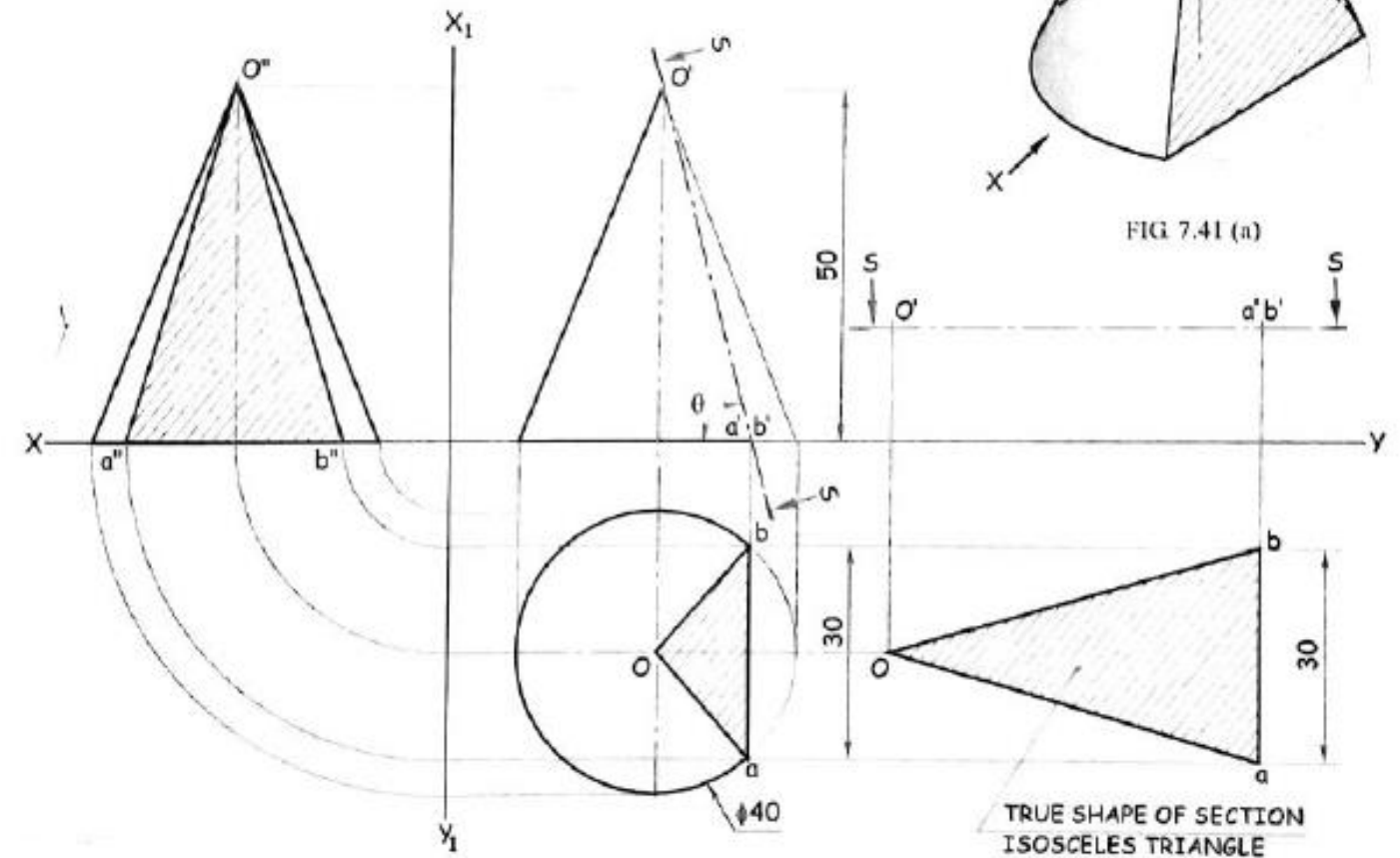
A hexagonal pyramid of 35 mm side of base and 65 mm axis length rest on its base on the H.P. with one of its side of a base perpendicular to the V.P. It is cut by the section plane whose H.T. makes an angle 30° with the XY and is 15 mm away from the axis of a pyramid. Draw the T.V., sectional F.V., sectional S.V. and the true shape of a section.

Solution