MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

Department of Mechanical and Manufacturing Engineering

ENGINEERING GRAPHICS - II

CLASS 1: SECTION OF SOLIDS 1

(SHEET 1)

QUESTION BANK: SECTION OF SOLIDS- PROBLEM 3

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60^{o} to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

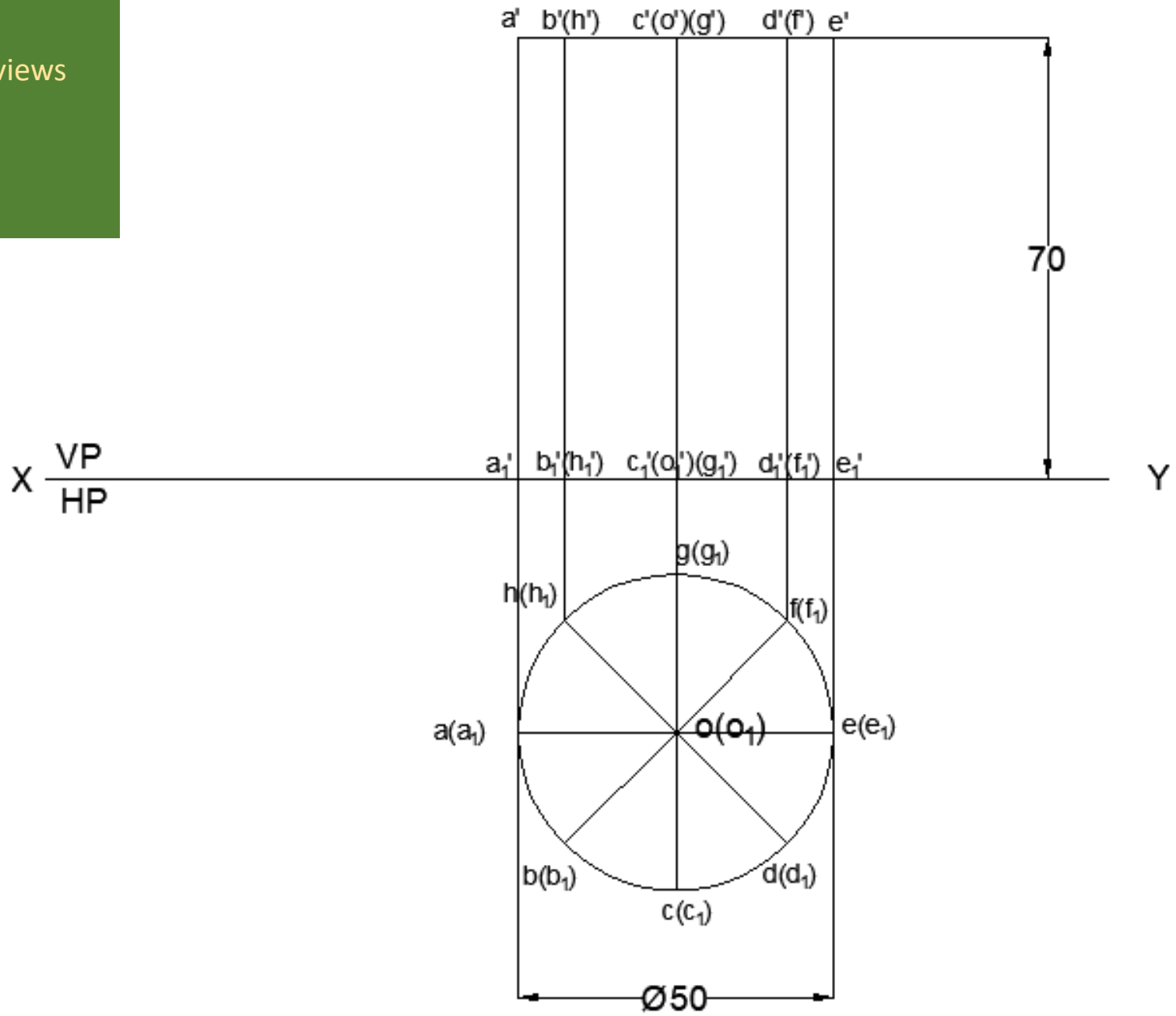
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Draw the XY line
- Draw the top and front views
- Dimensioning
- Naming



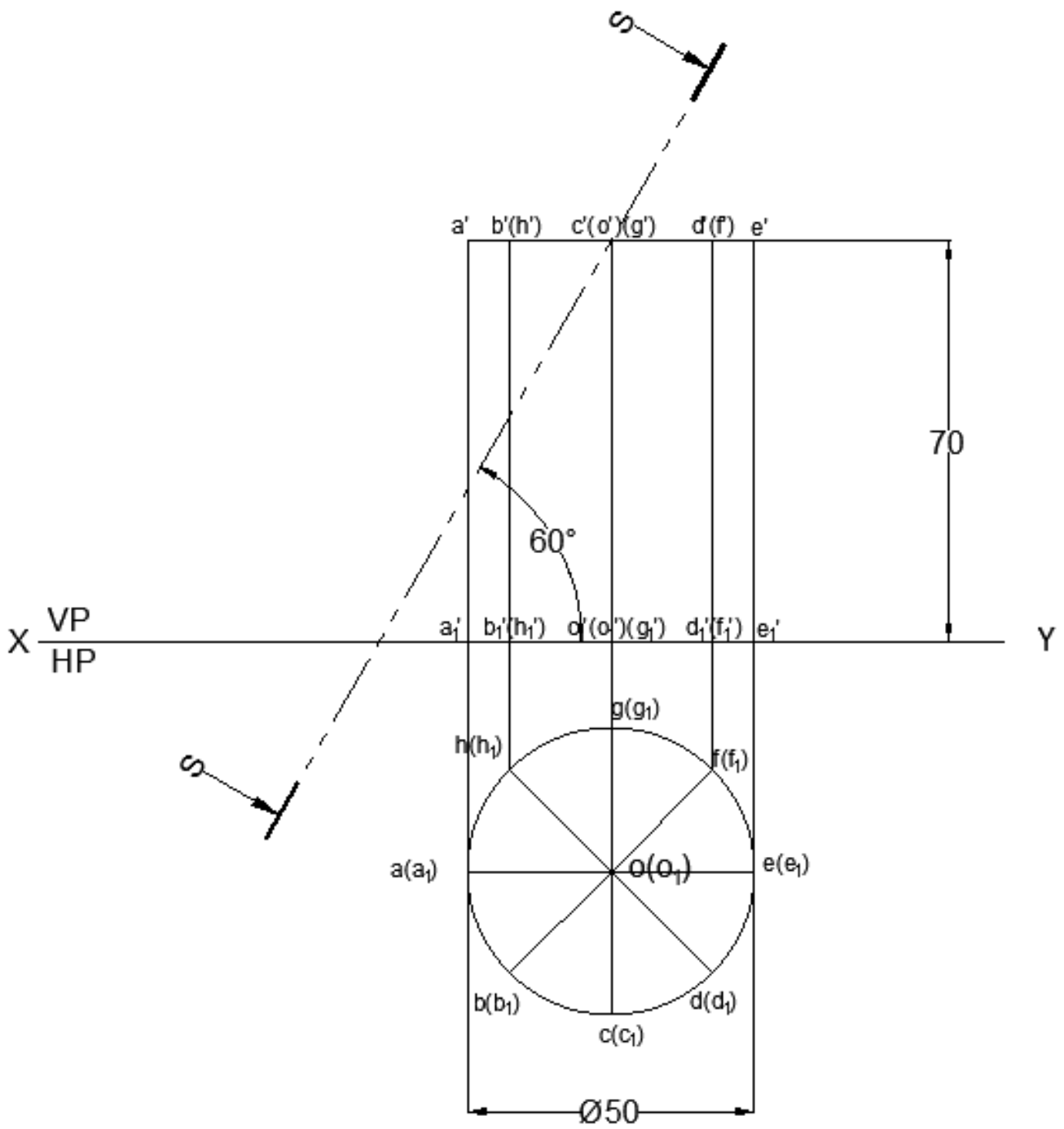
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Draw the section line at 60° passing through centre of the top face.



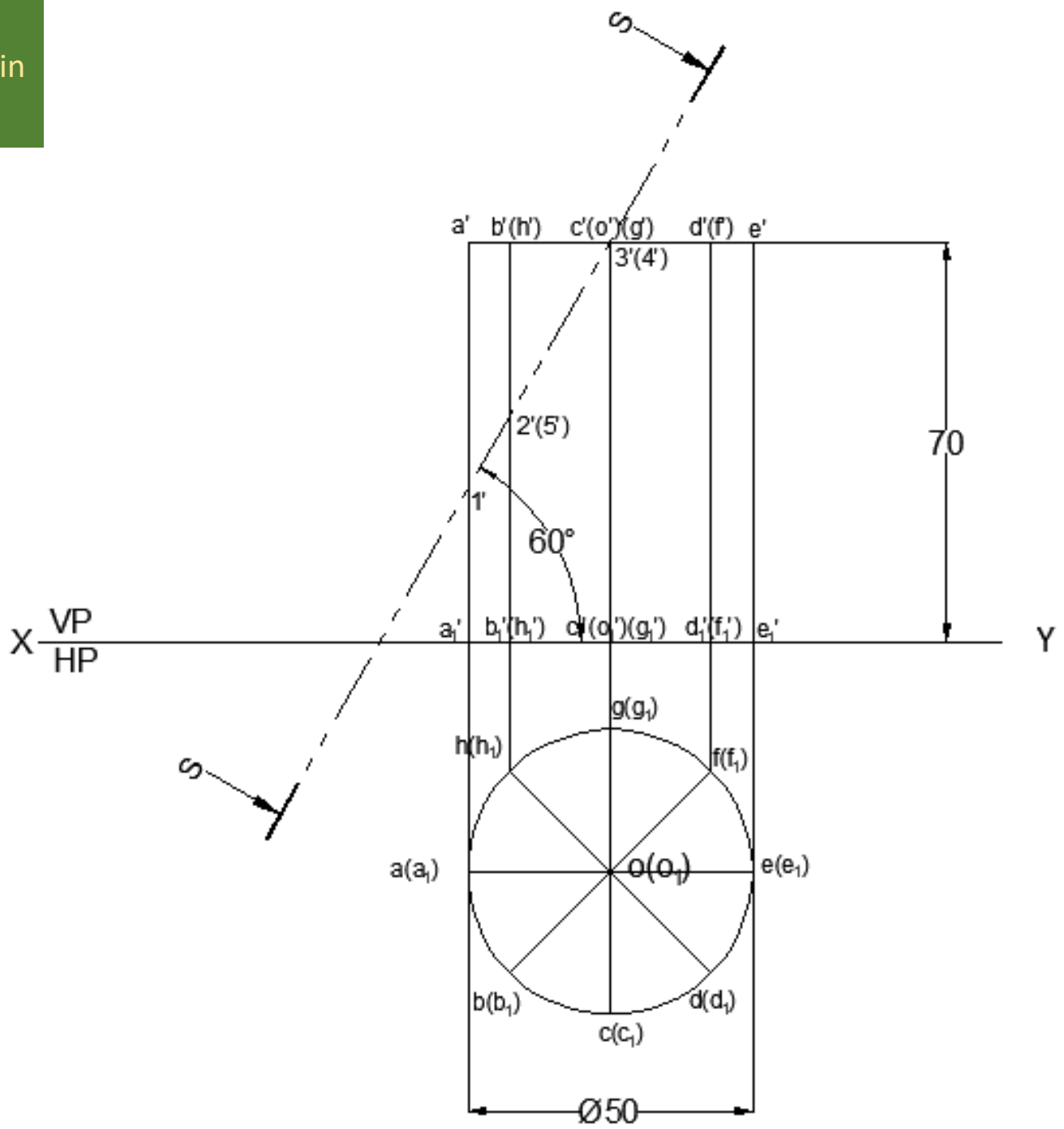
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Identify & number the cutting points in the front view



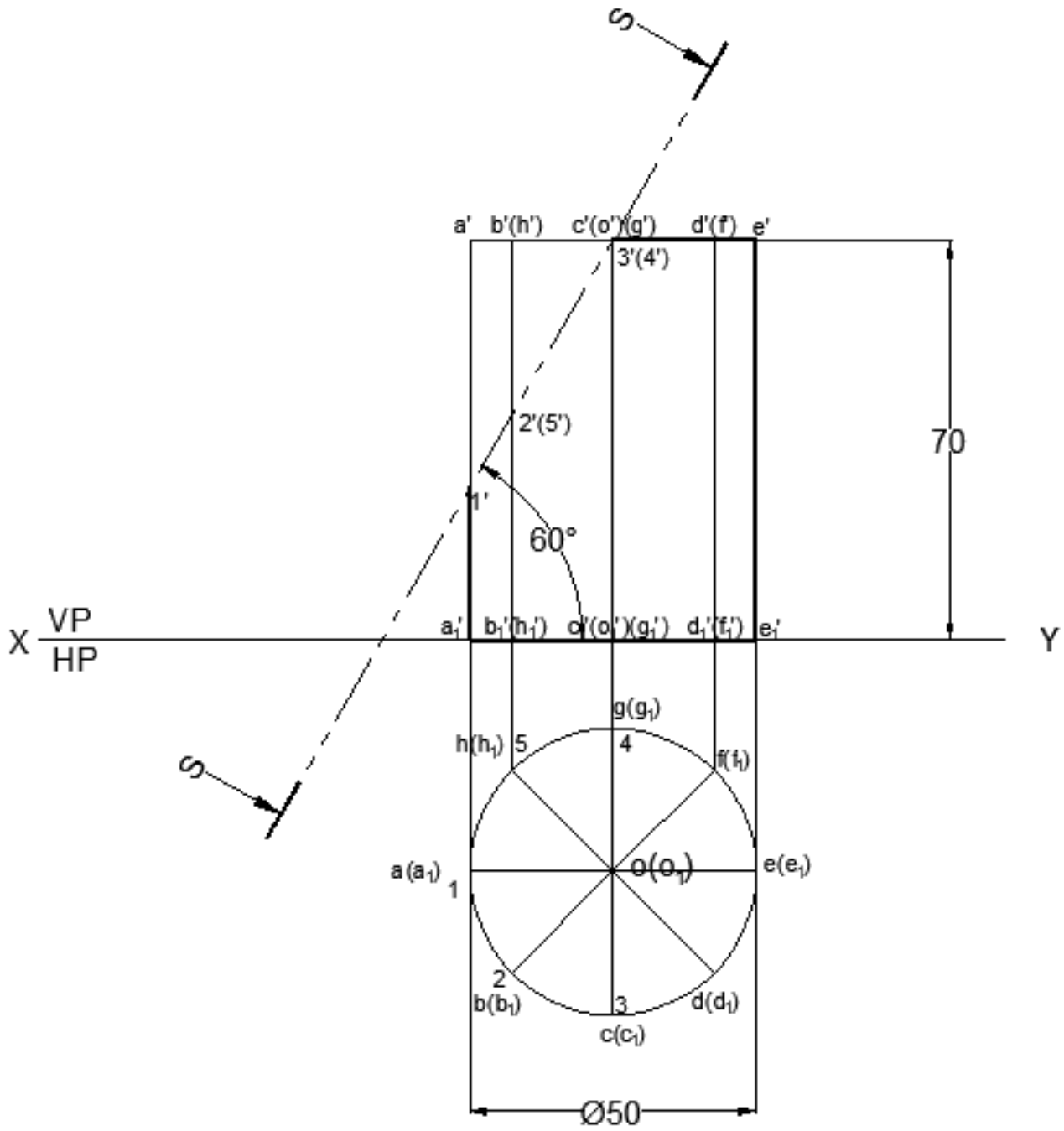
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Darken the retained portion in the front view
- Mark the cutting points in the top view



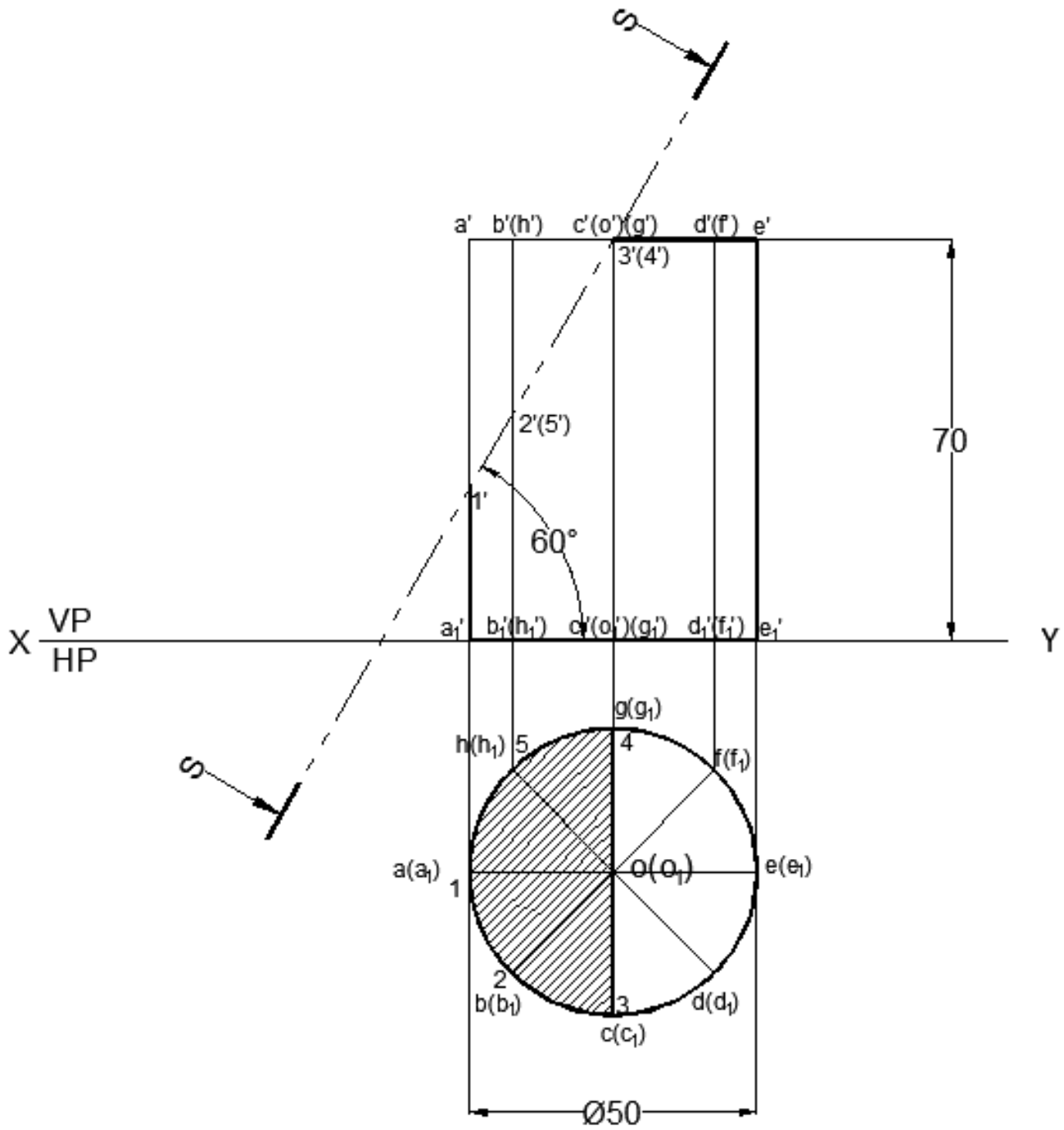
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Darken the retained portion in the top view
- Hatch the cut portion



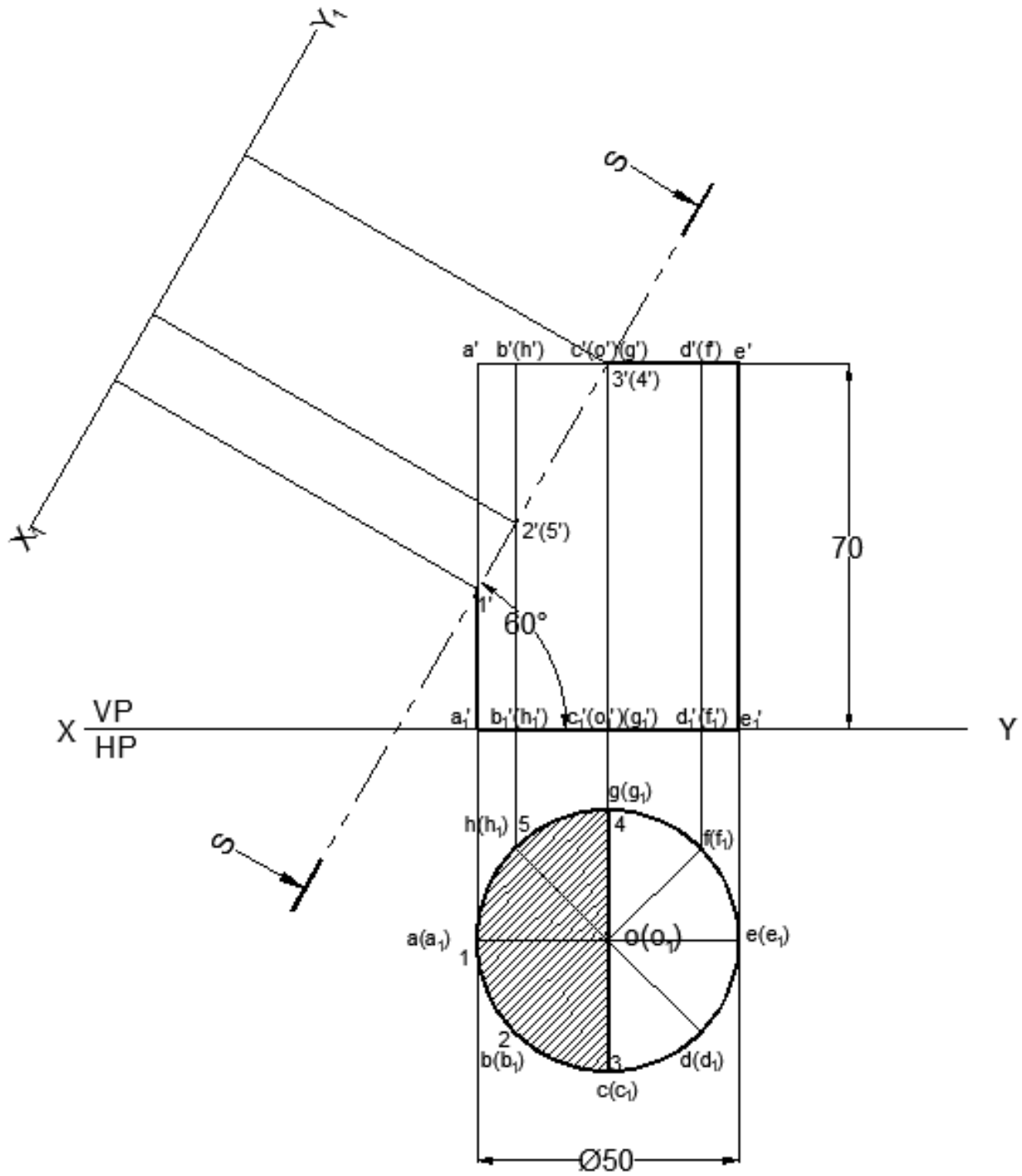
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Project perpendiculars from the cutting points
- Mark X_1Y_1 at suitable distance from section line



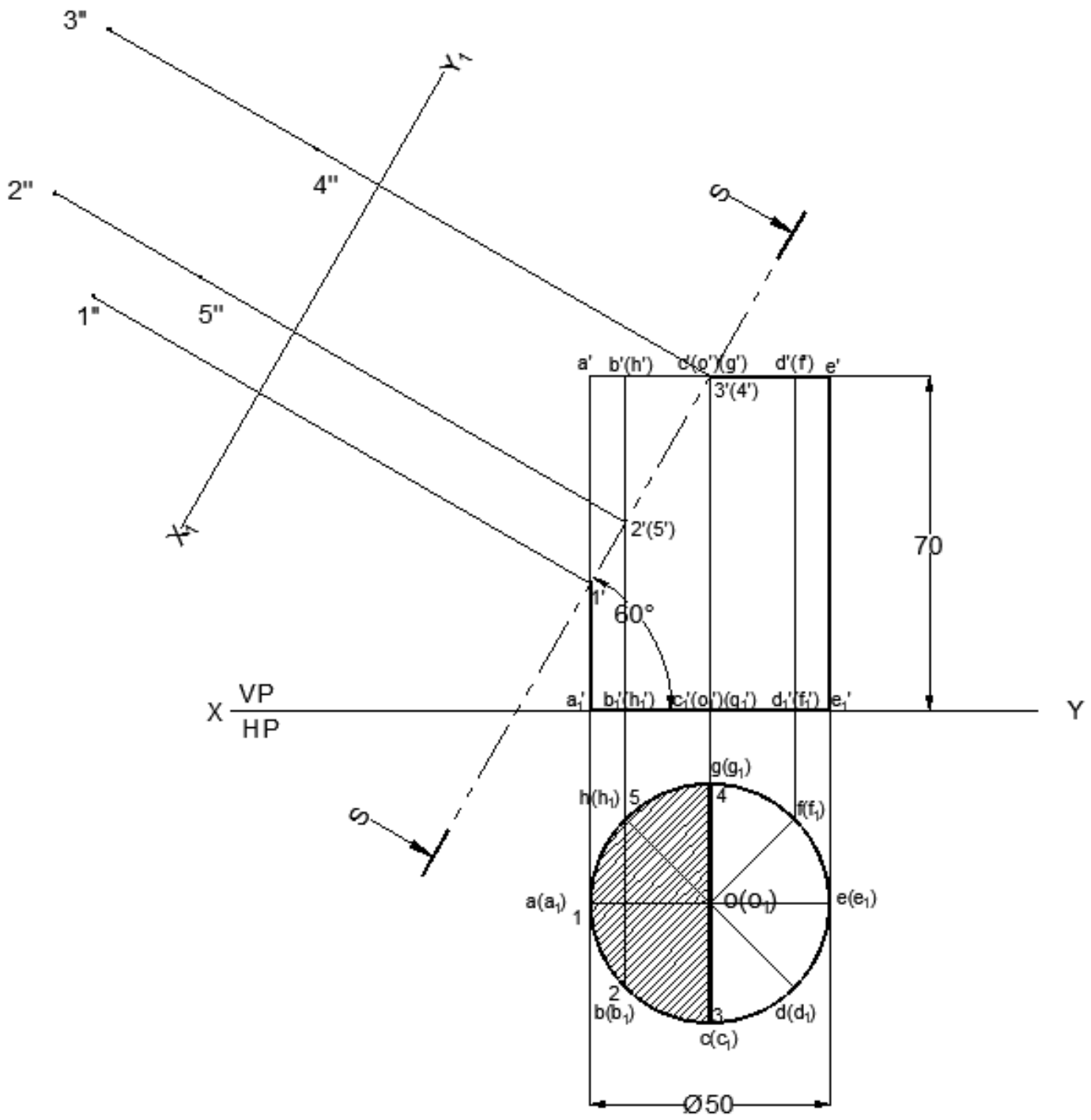
Data

- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.

Steps Involved

- Mark the distances (from XY line in the top view) and transfer on the extended perpendiculars
- Mark all the points

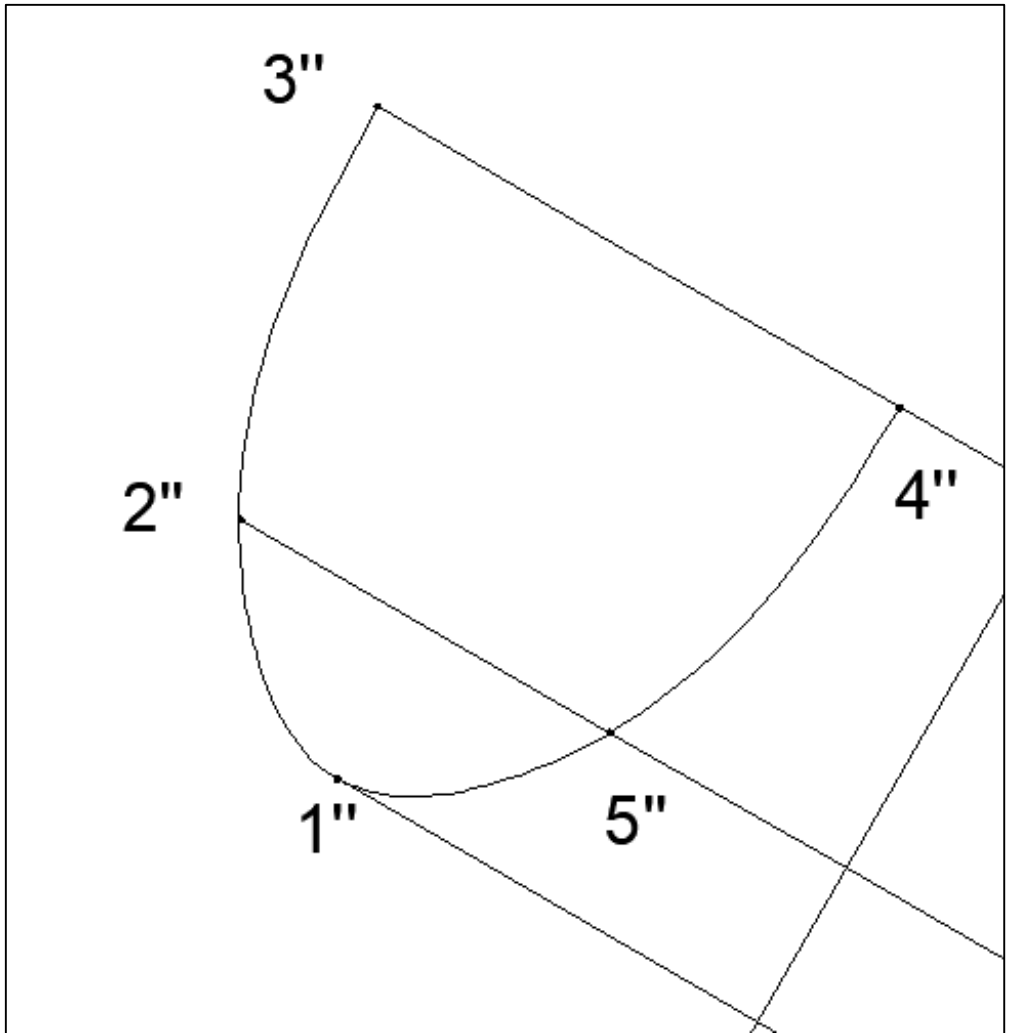


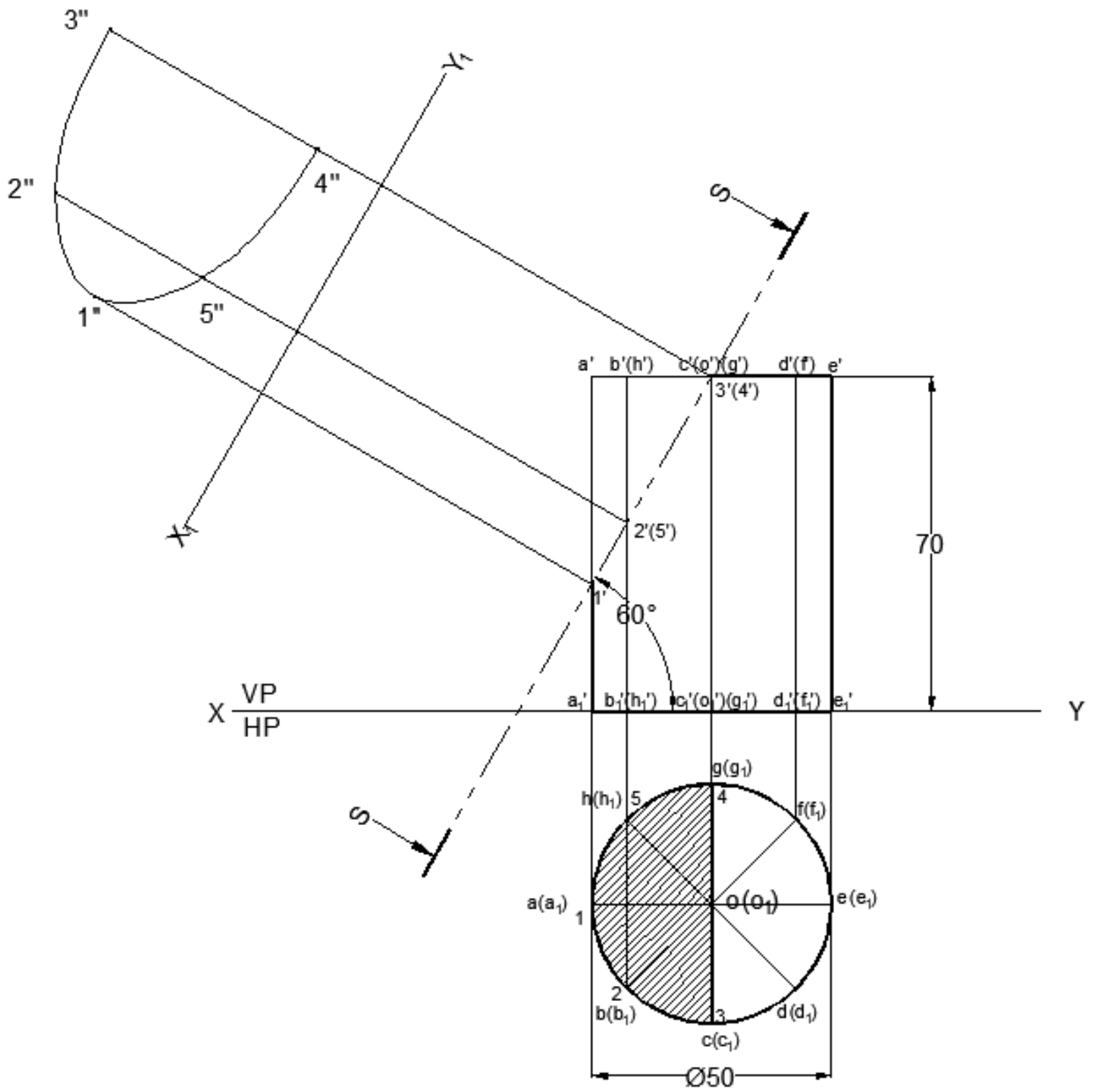
Data

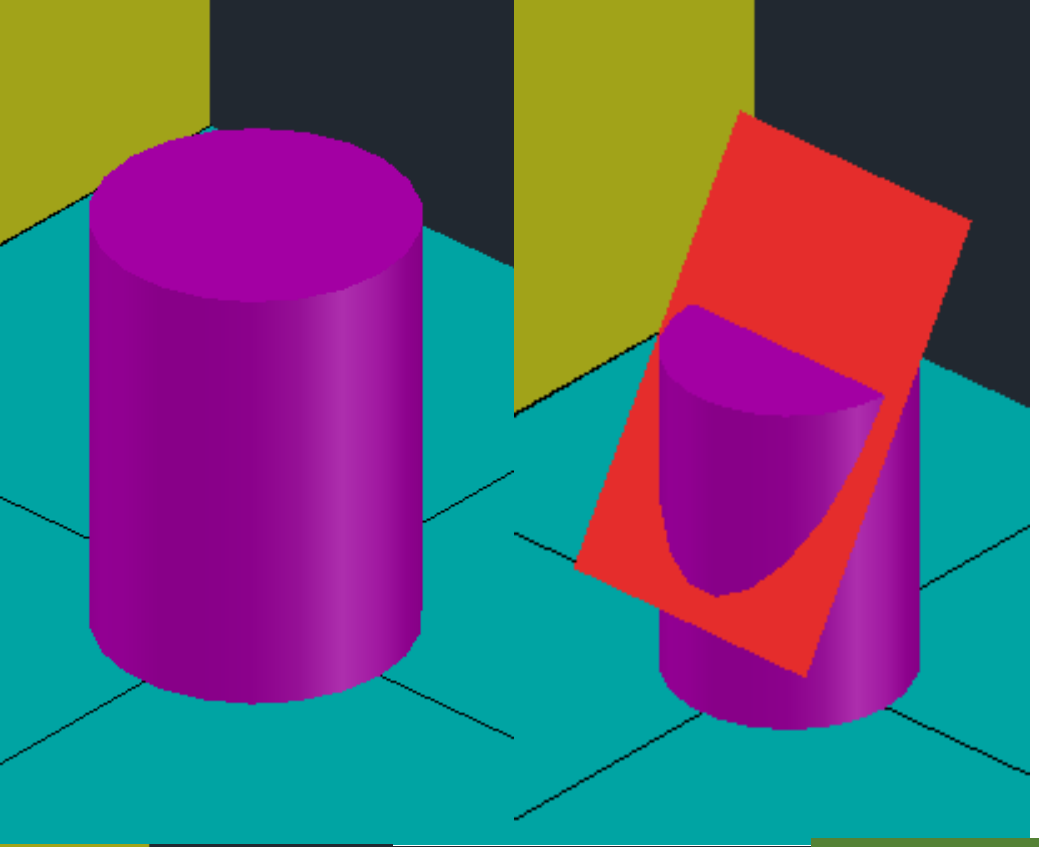
- Cylinder.
- 50mm diameter & 70mm height.
- Resting with base on HP.
- Section plane is AIP at 60°.
- Cuts through centre of the top face.

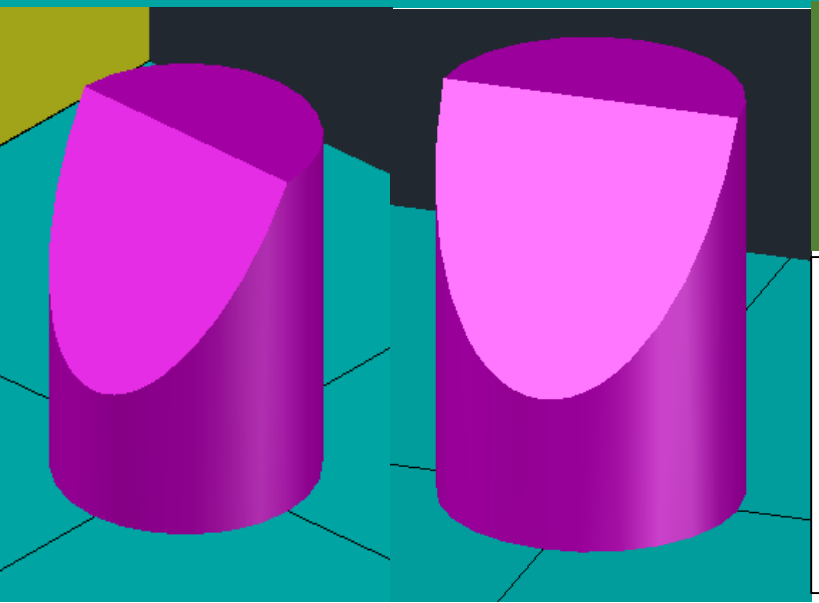
Steps Involved

- Join the points with straight line from 3”- 4” and with a smooth curve from 3”- 2”- 1”- 5”- 4”









Steps Involved

- Hatch the true shape of section at 45° to X_1Y_1 line
- Write “TRUE SHAPE OF THE SECTION”

A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60° to HP cuts the cylinder so as to pass through the centre of the top face. Draw its front view, sectional top view and true shape of the section.