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

Department of Mechanical and Manufacturing Engineering

ENGINEERING GRAPHICS - II

CLASS 2: SECTION OF SOLIDS

(SHEET 2)

A cone of base 60mm diameter and height 70mm rests with its base on HP. It is cut by an AIP bisecting the axis and inclined at 45° to HP. Draw its sectional top view. Obtain the true shape of the section and identify it.

Data

- Cone.
- 60mm diameter & 70mm height.
- Resting on its base on HP.
- Section plane is AIP at 45°.
- Bisecting the axis.

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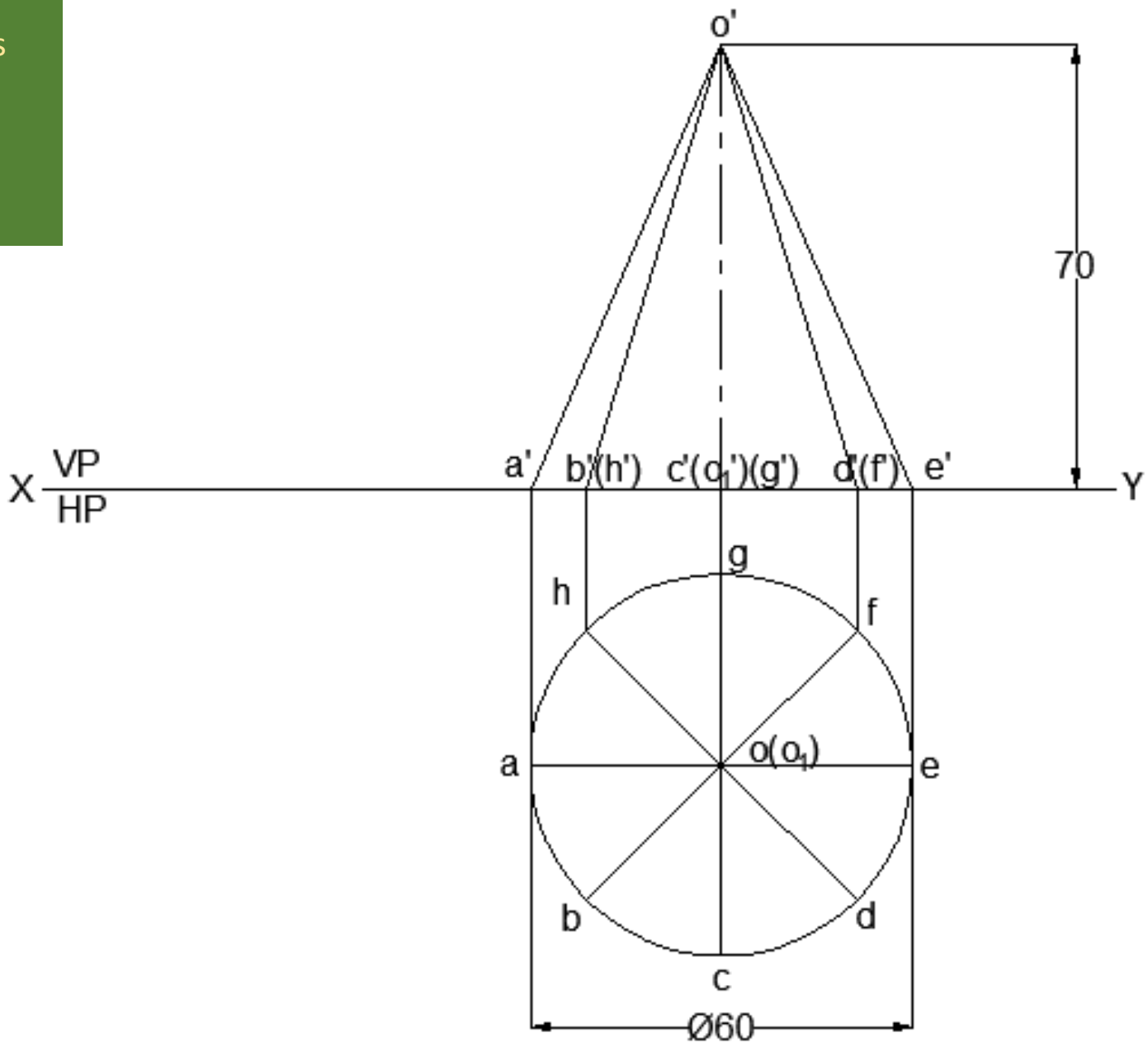
Steps Involved

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



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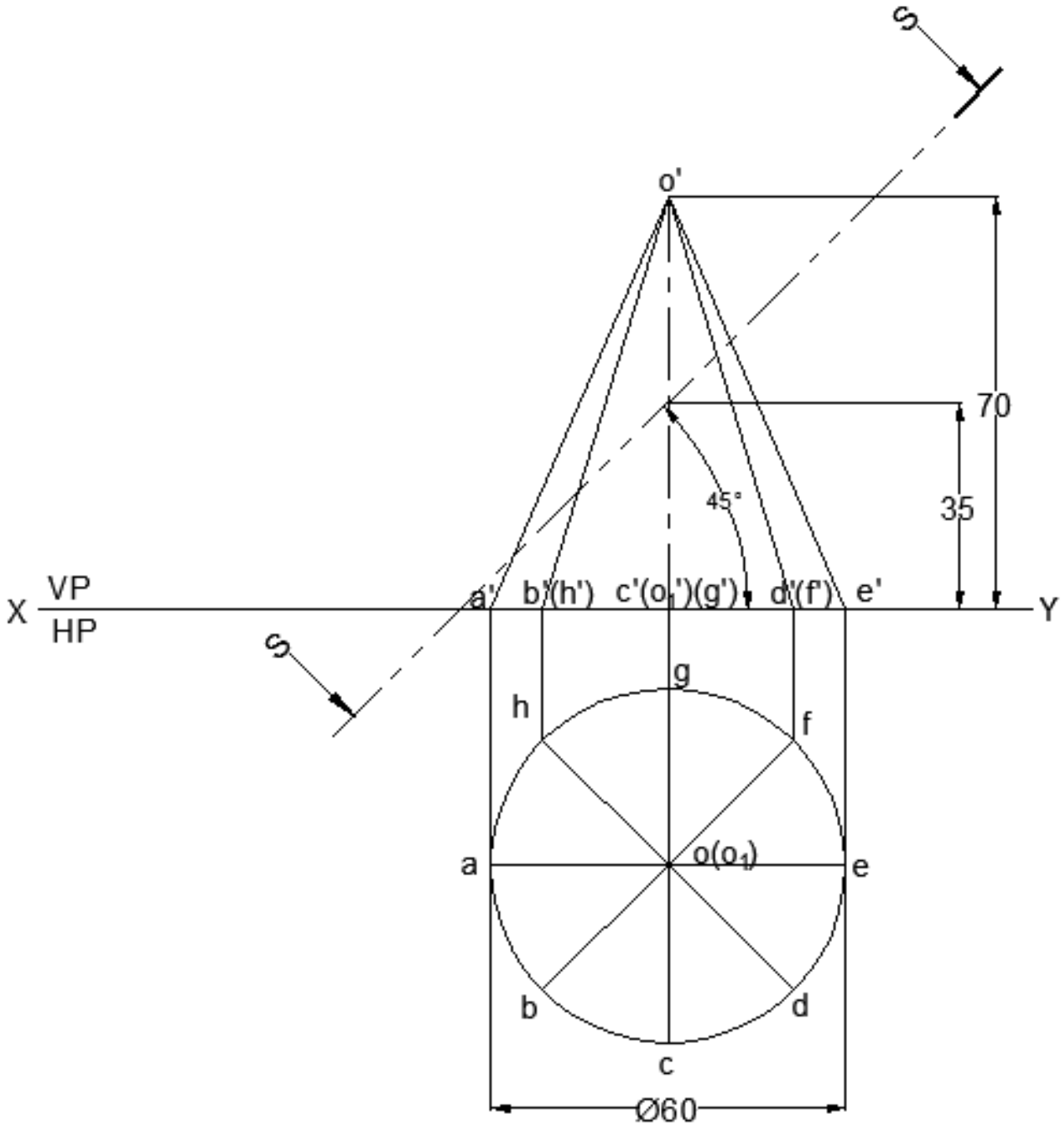
Steps Involved

- Draw the section line at 60° passing through midpoint of axis



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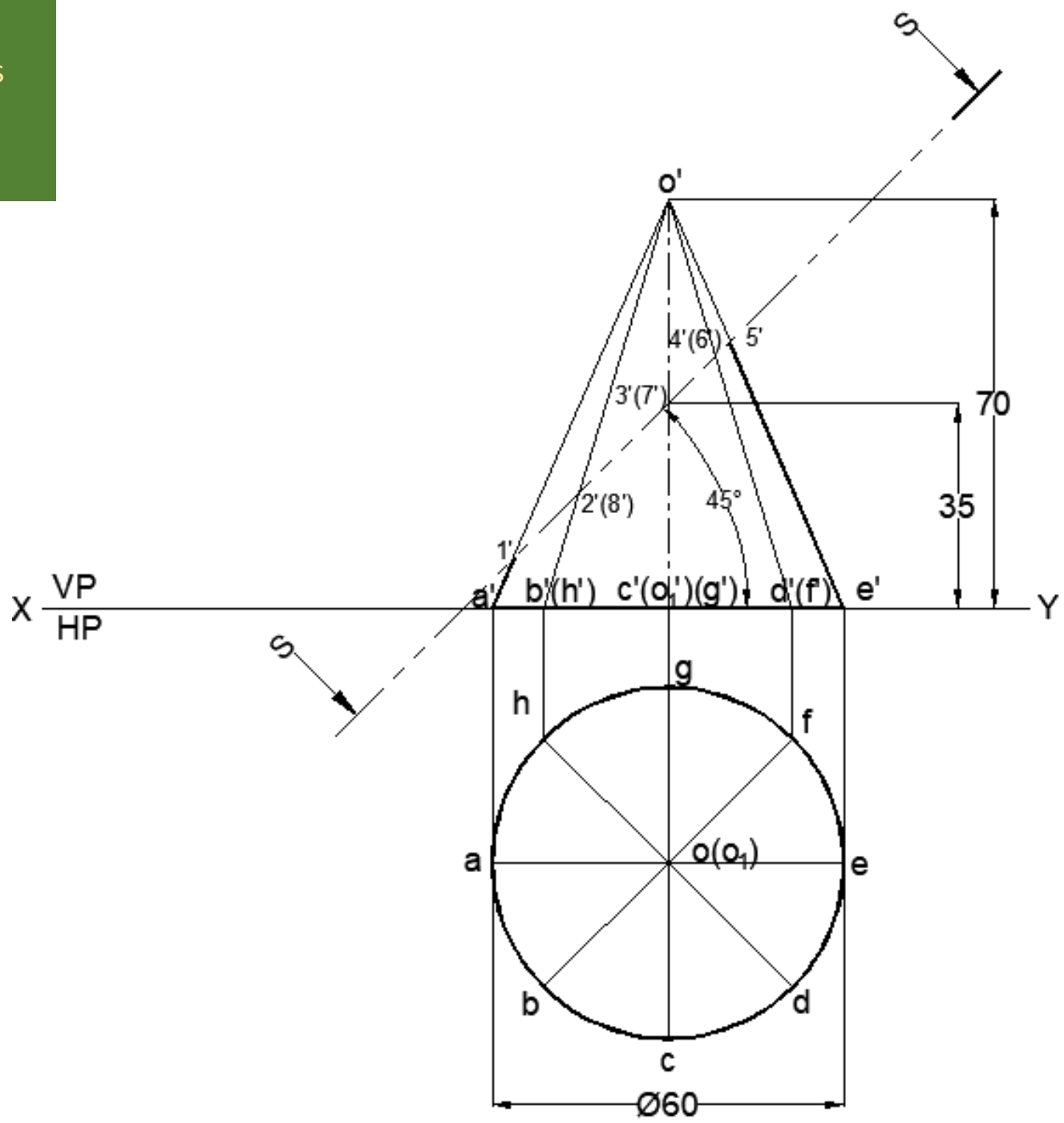
Steps Involved

- Identify & number the cutting points
- Darken the retained portion



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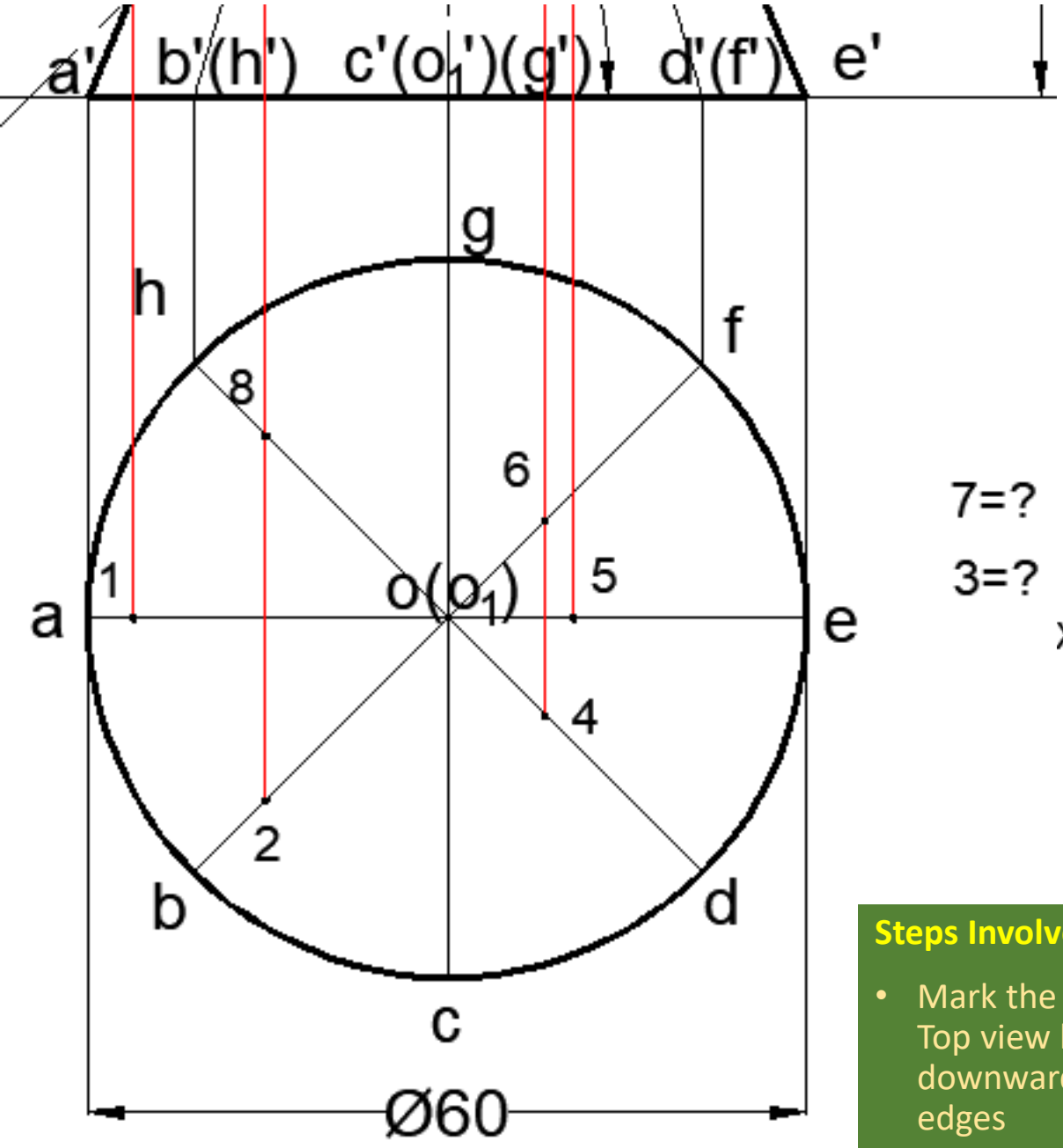
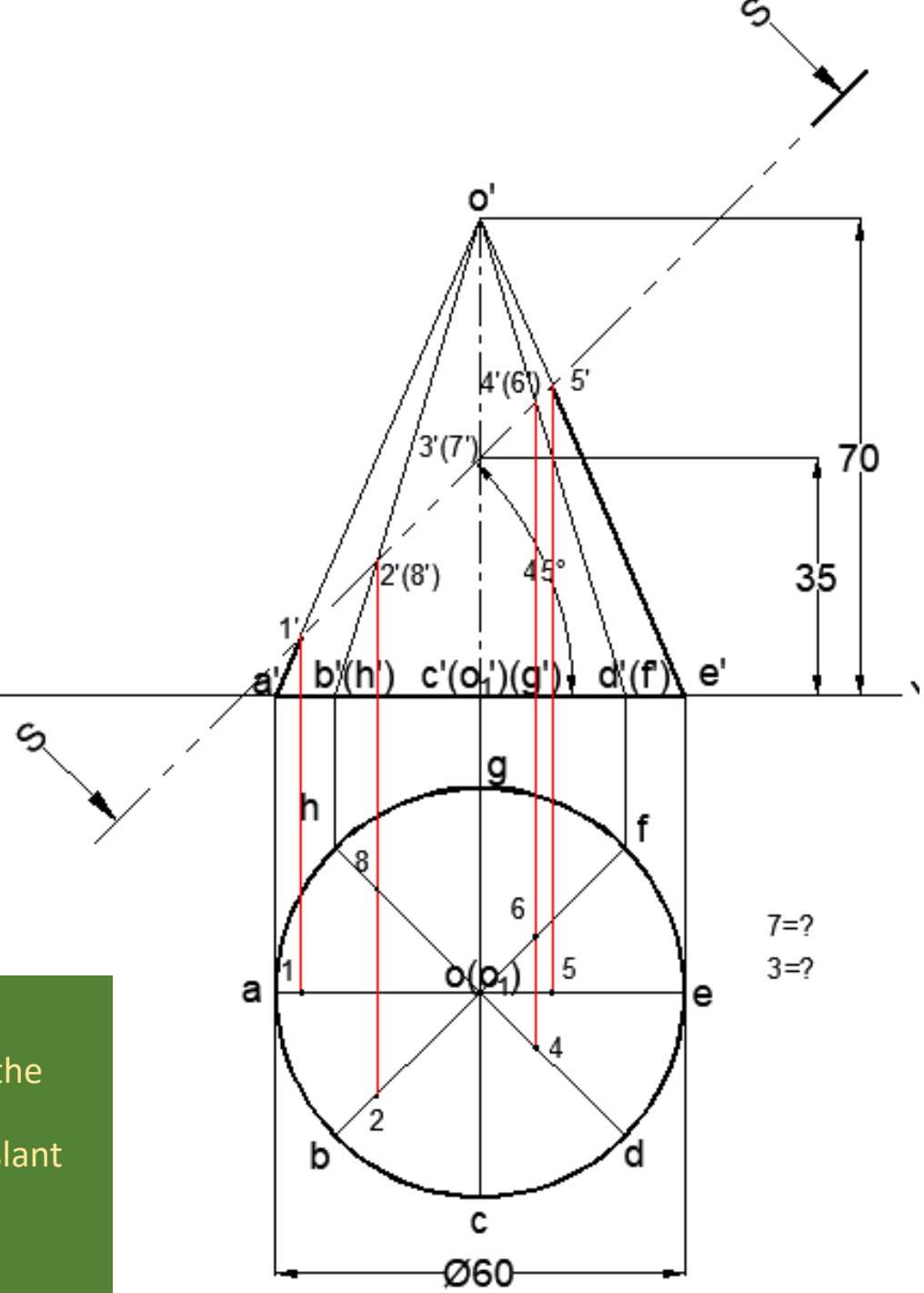


7=?

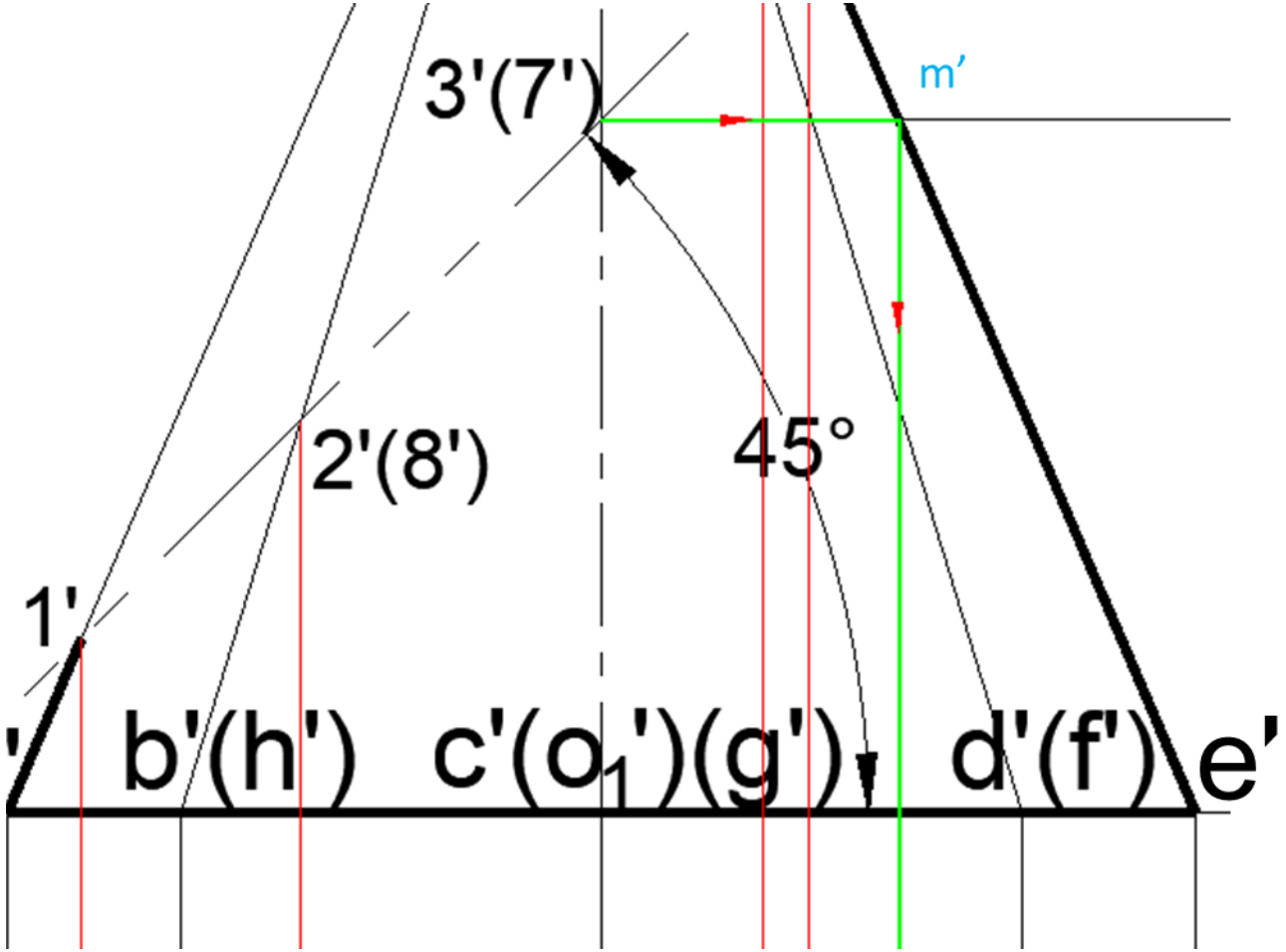
3=?

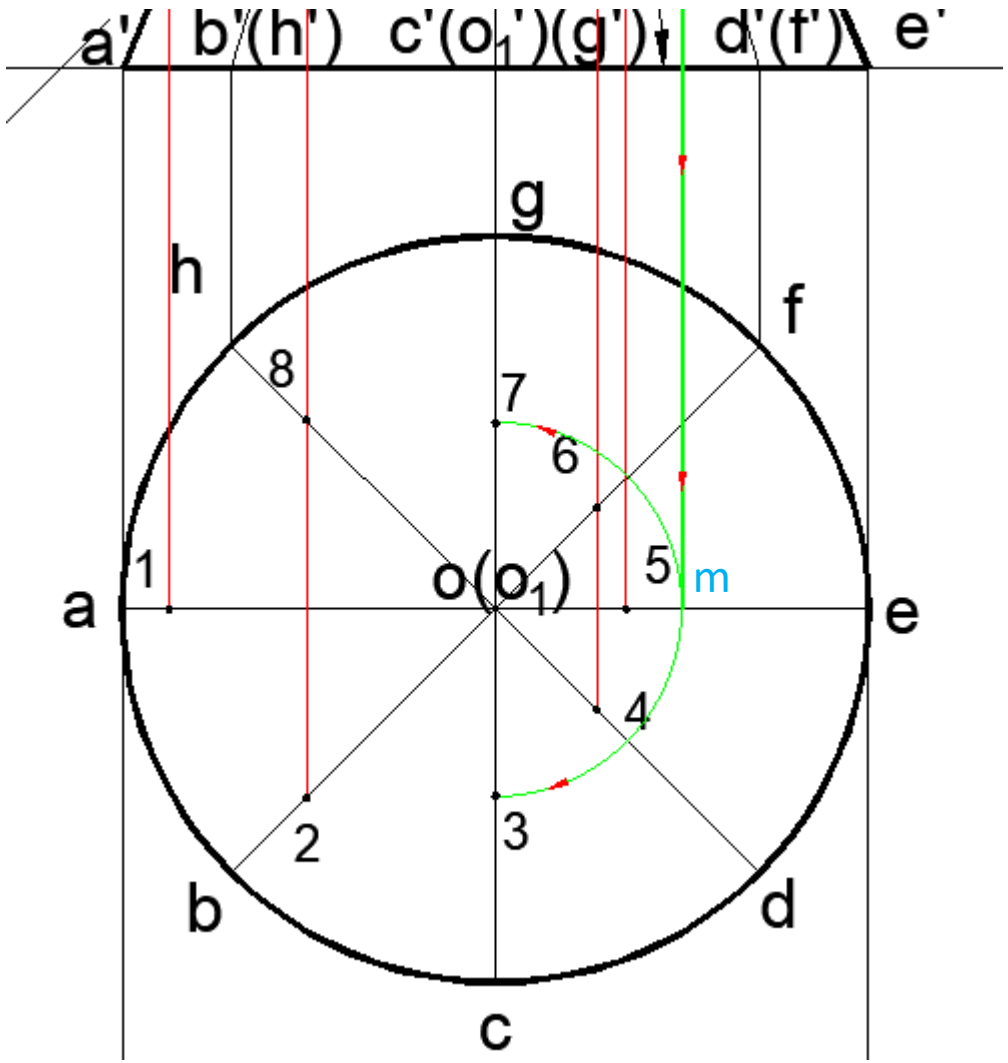
X VP / HP



Steps Involved

- Mark the cutting points in the Top view by projecting downwards on respective slant edges



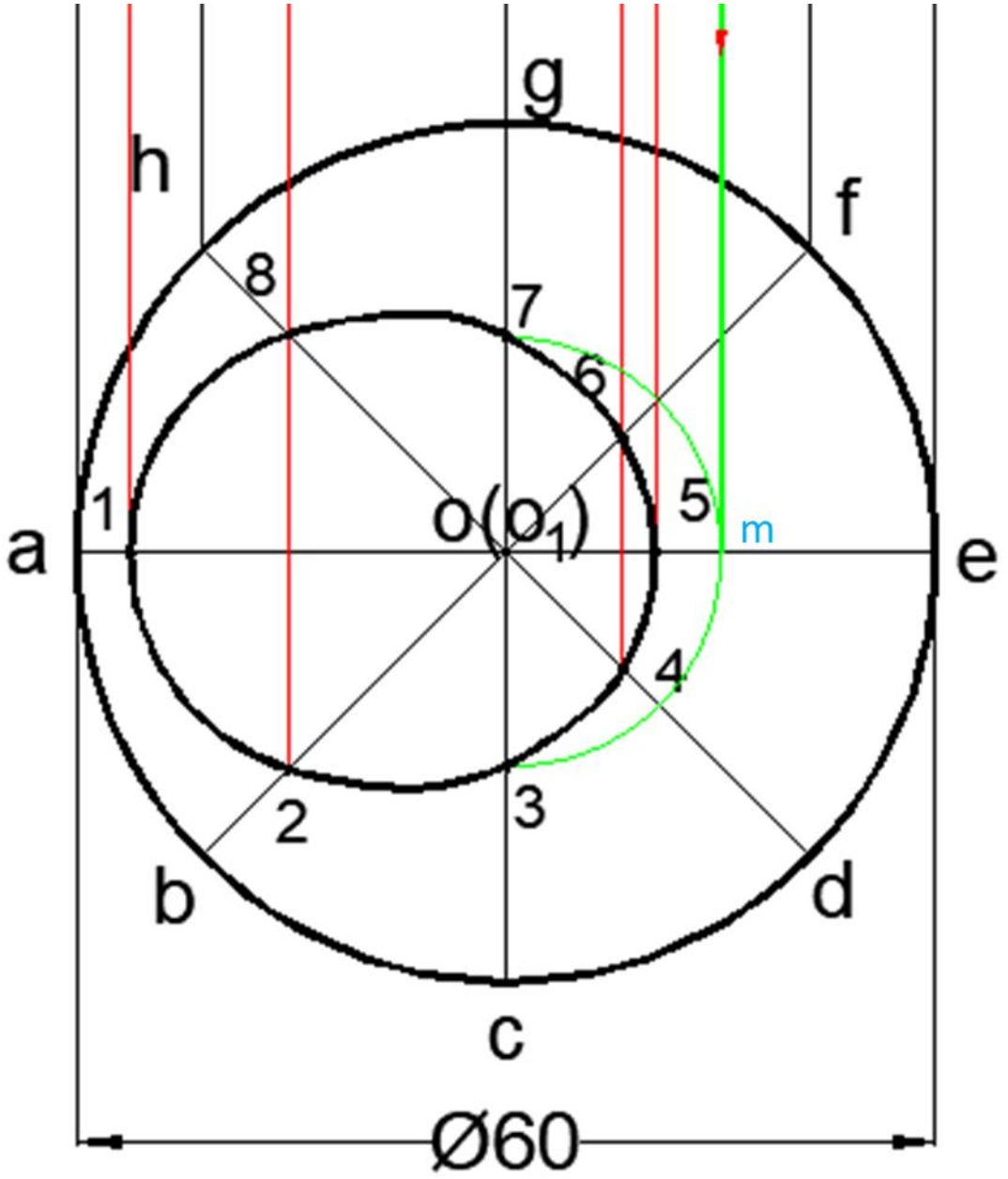


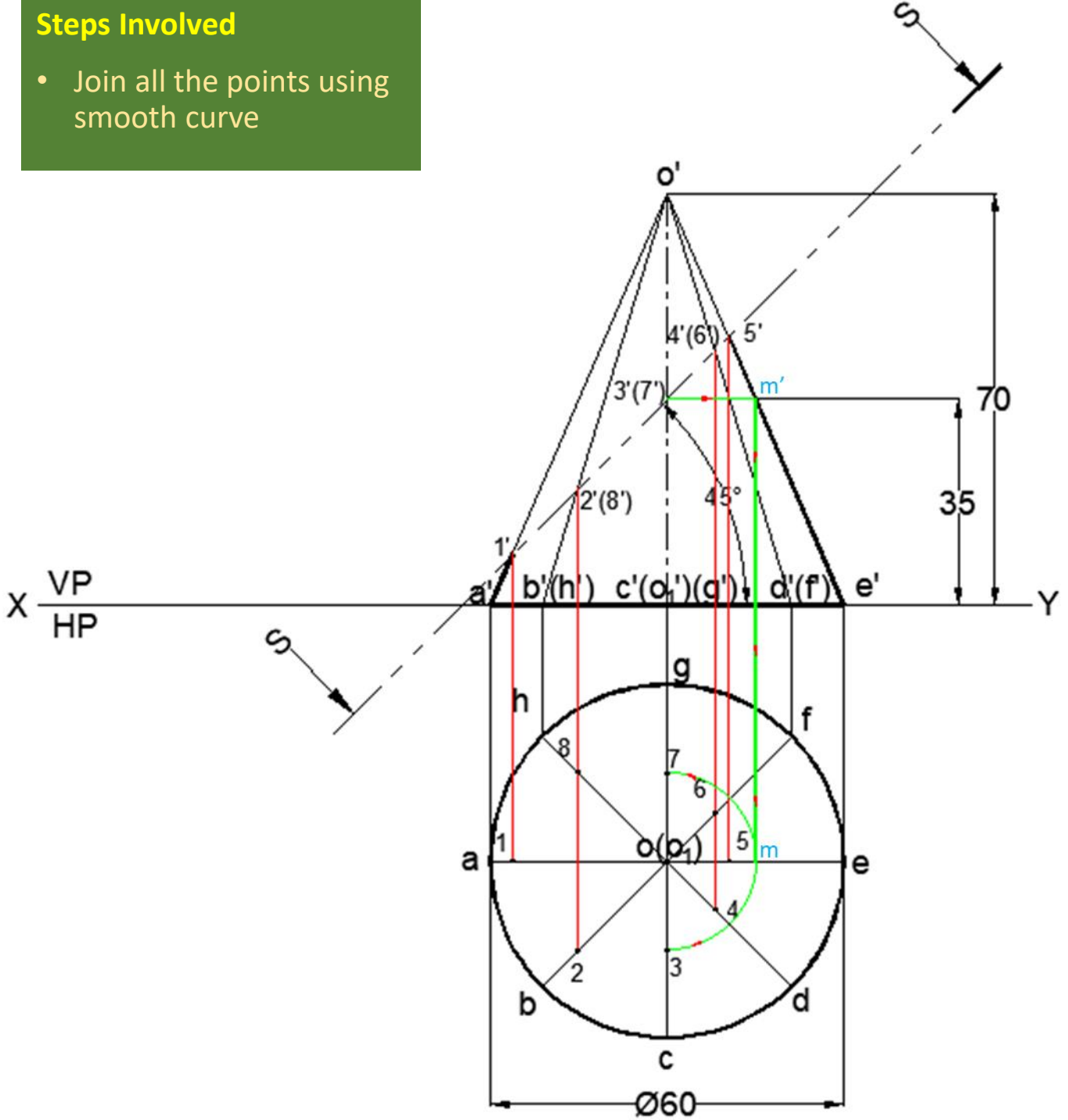
Steps Involved to mark 3 & 7

- Project horizontally from 3'&7' on to generator o'e', which is parallel to VP (And is of true length) to get m'
- Project downwards till it cuts its top view oe
- o as centre, cut an arc with radius om, to get 3 and 7 as shown

Steps Involved

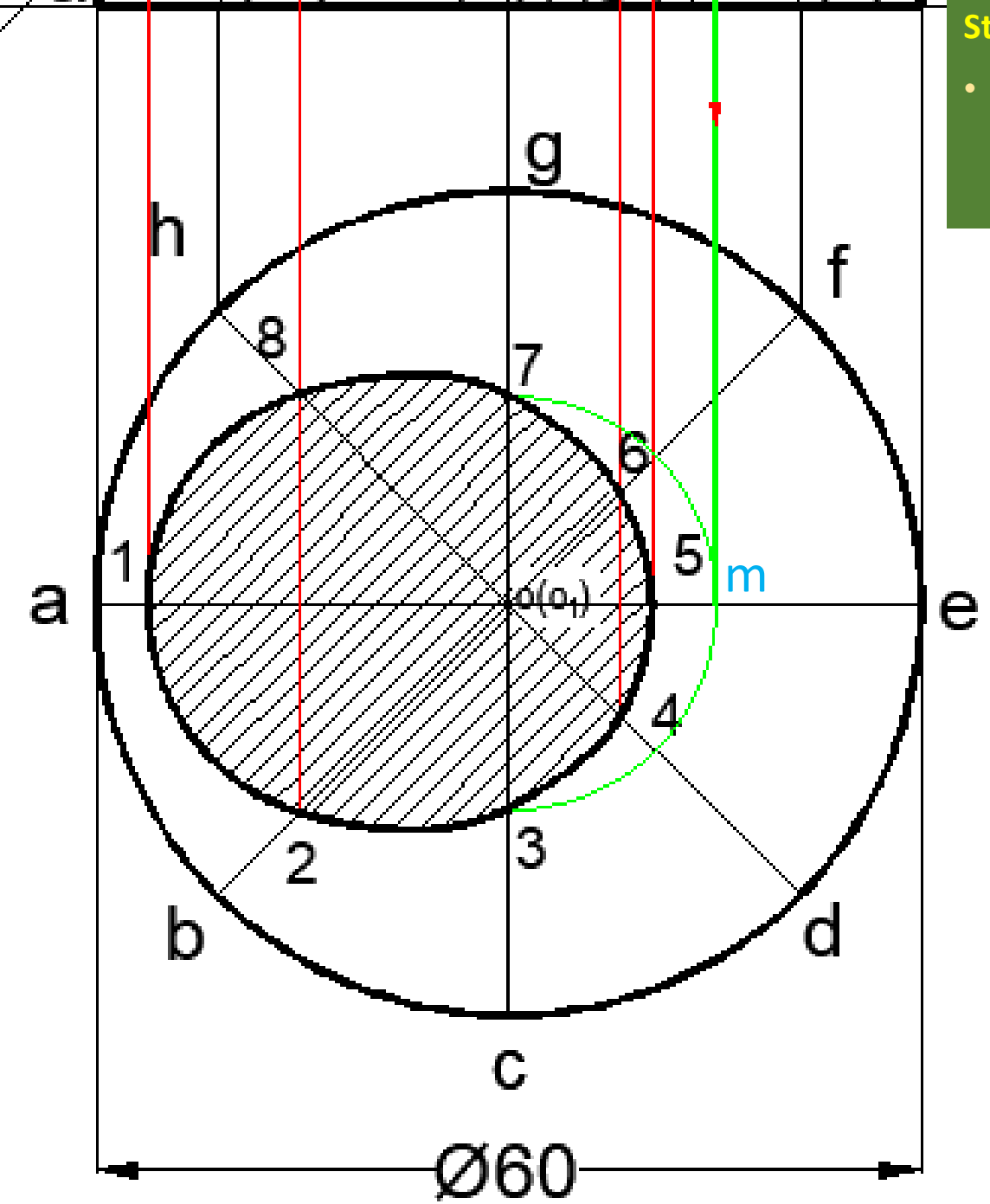
- Join all the points using smooth curve

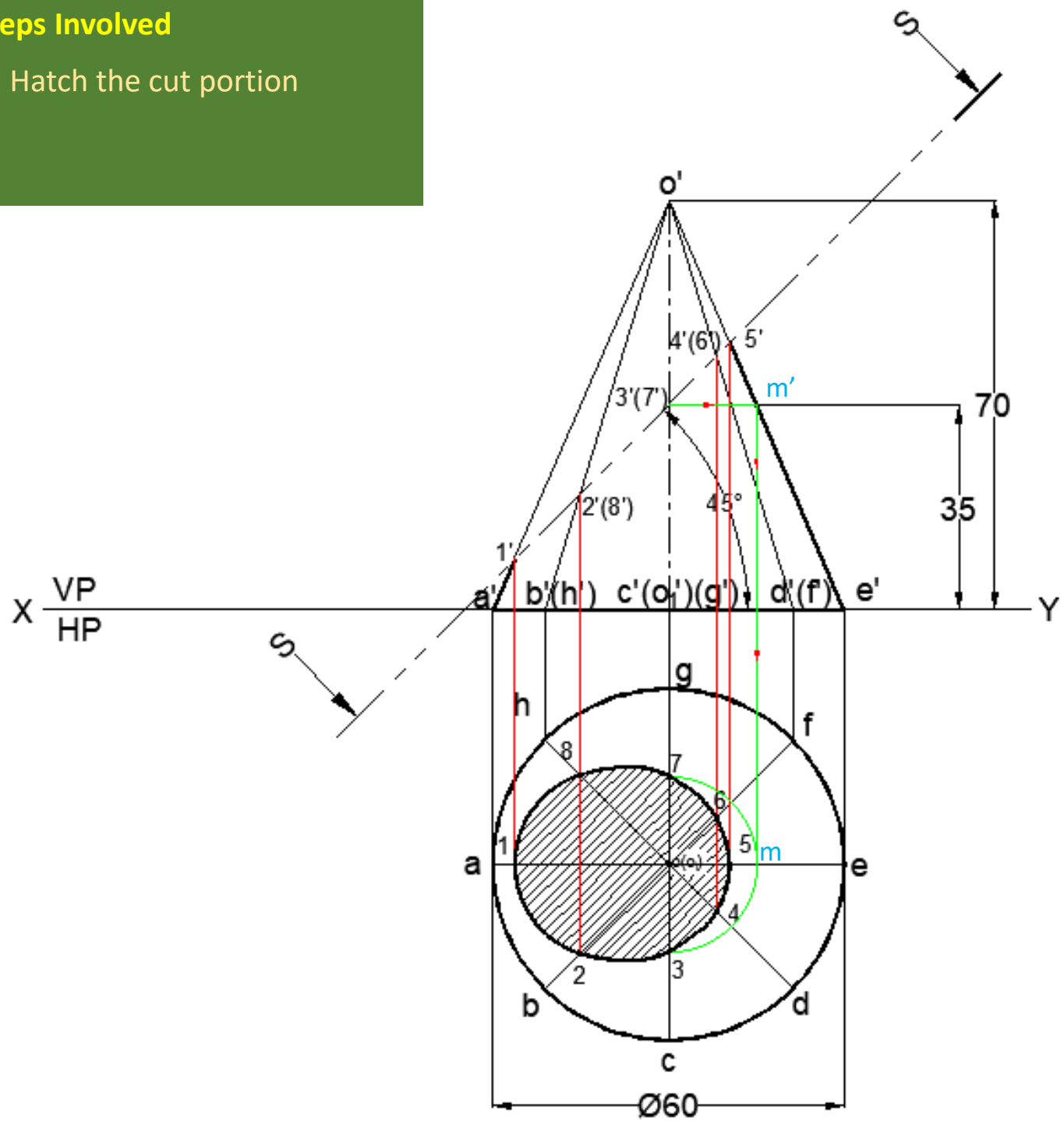




Steps Involved

- Hatch the cut portion





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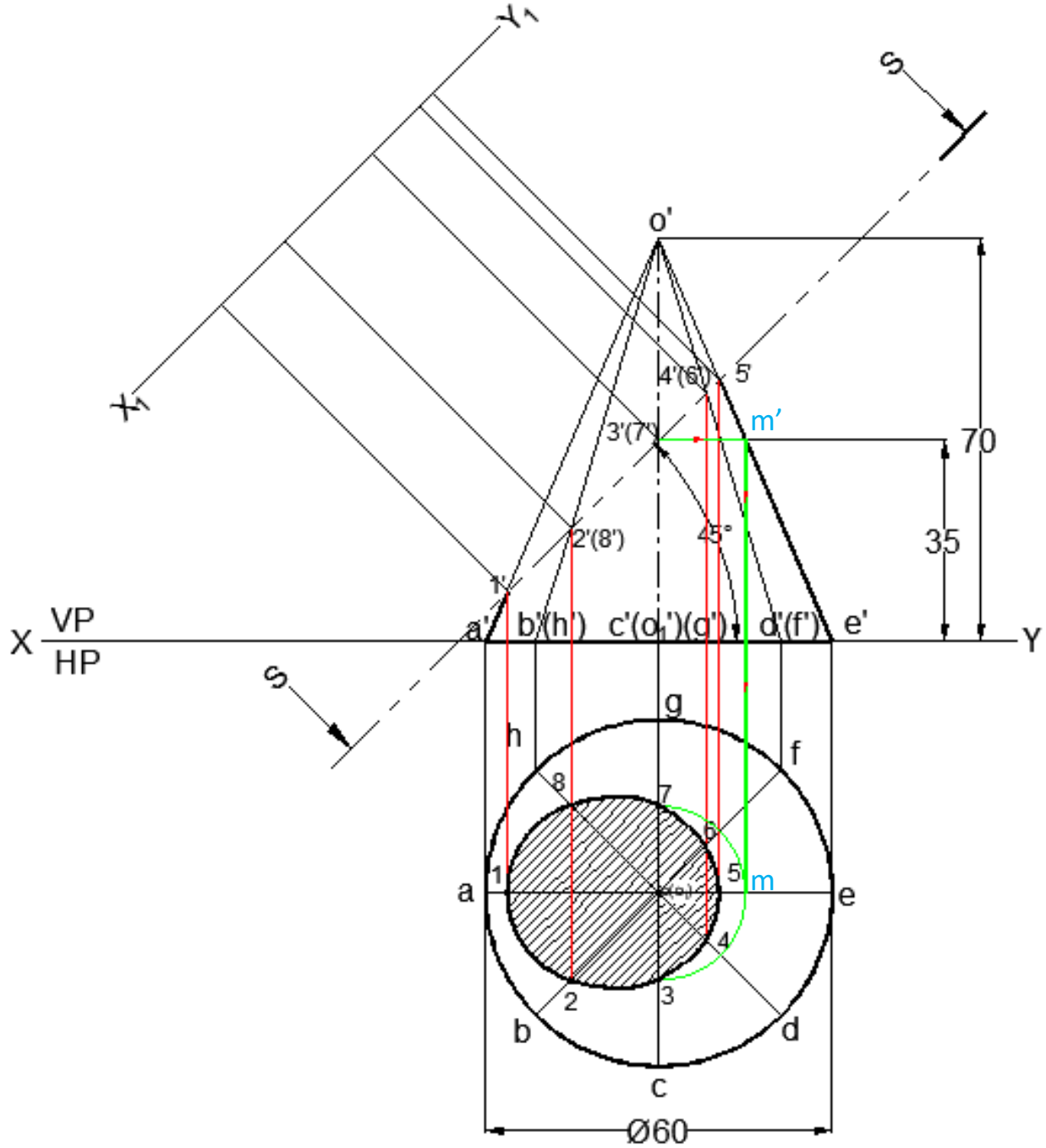
Steps Involved

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

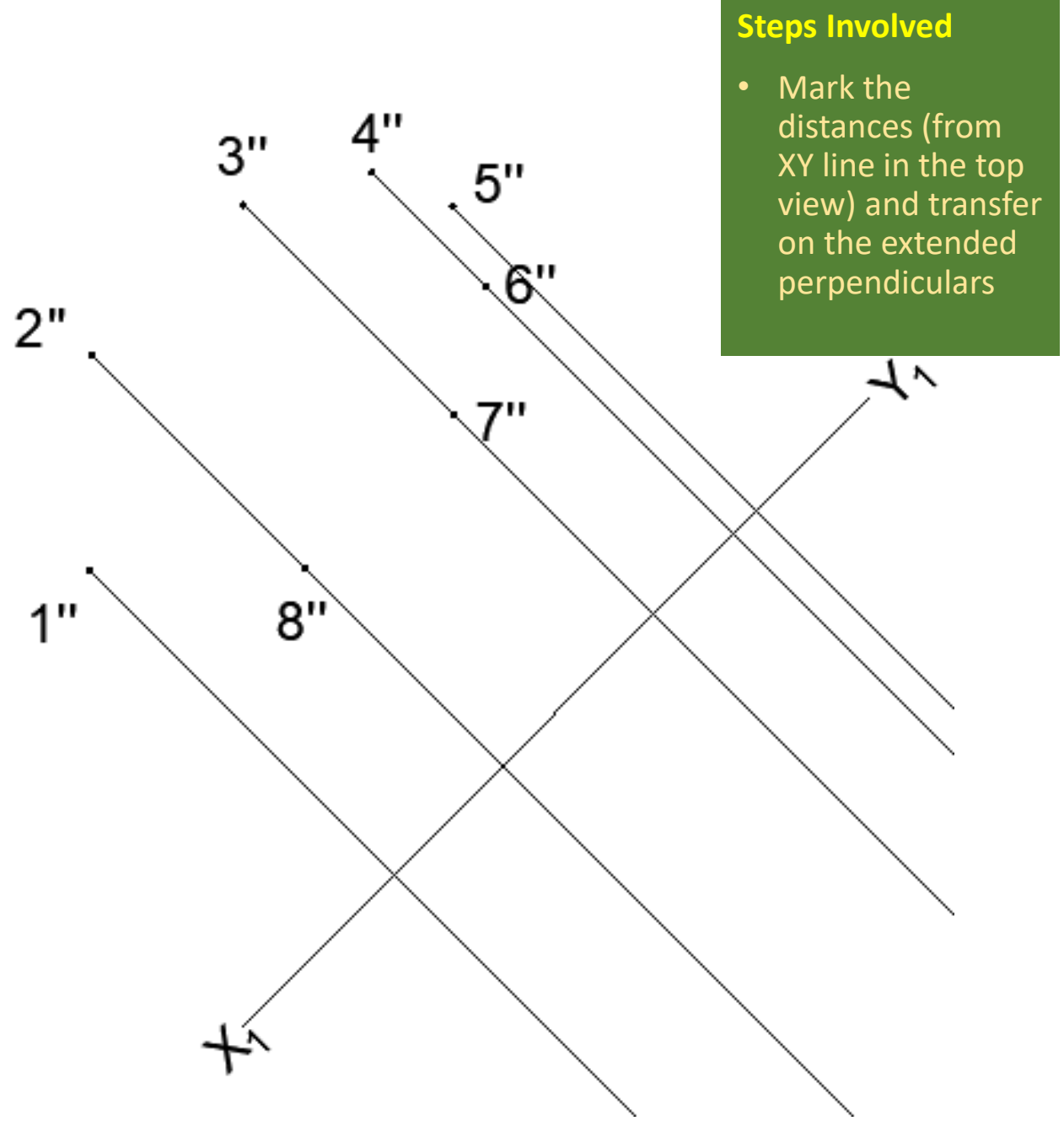


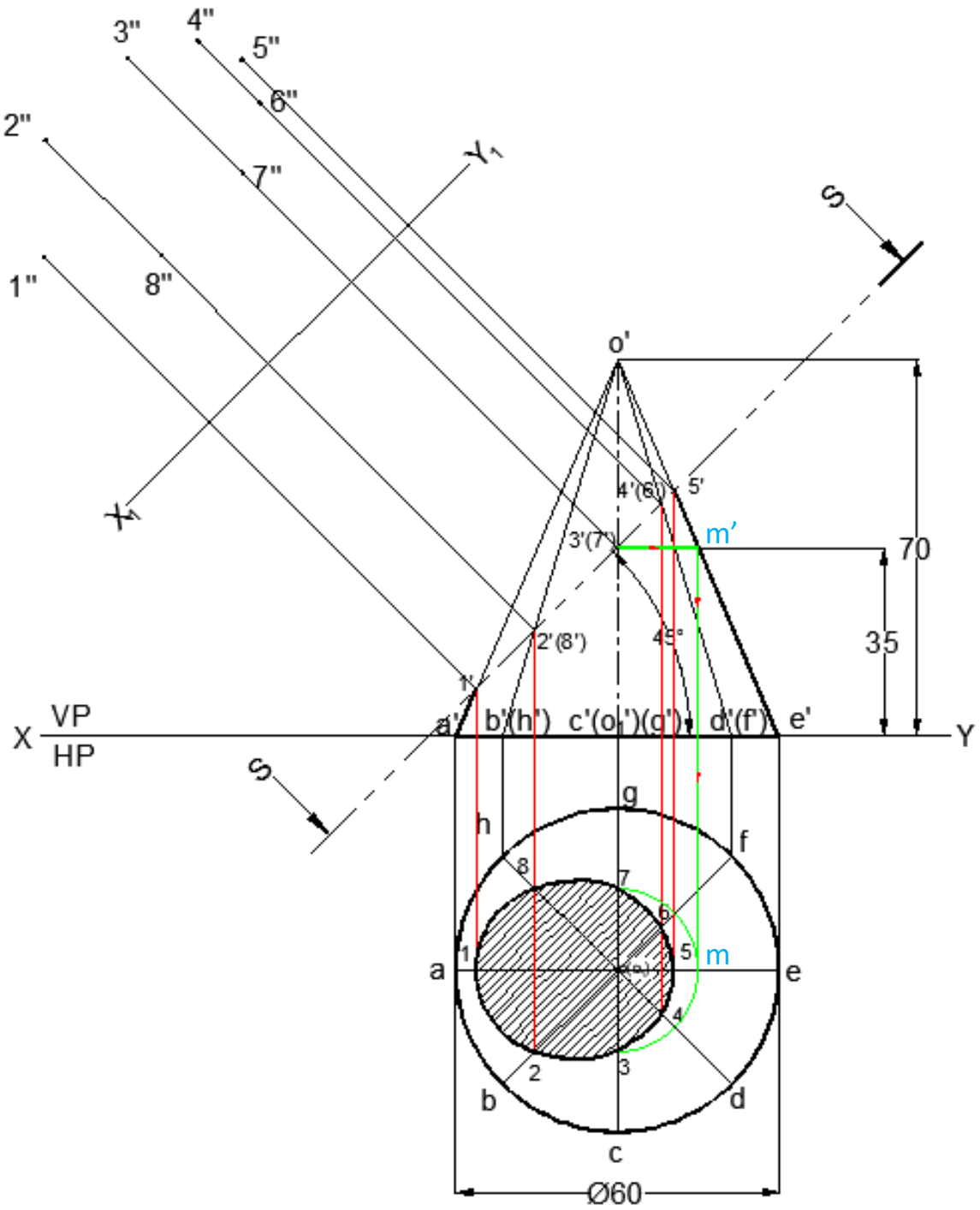
Data

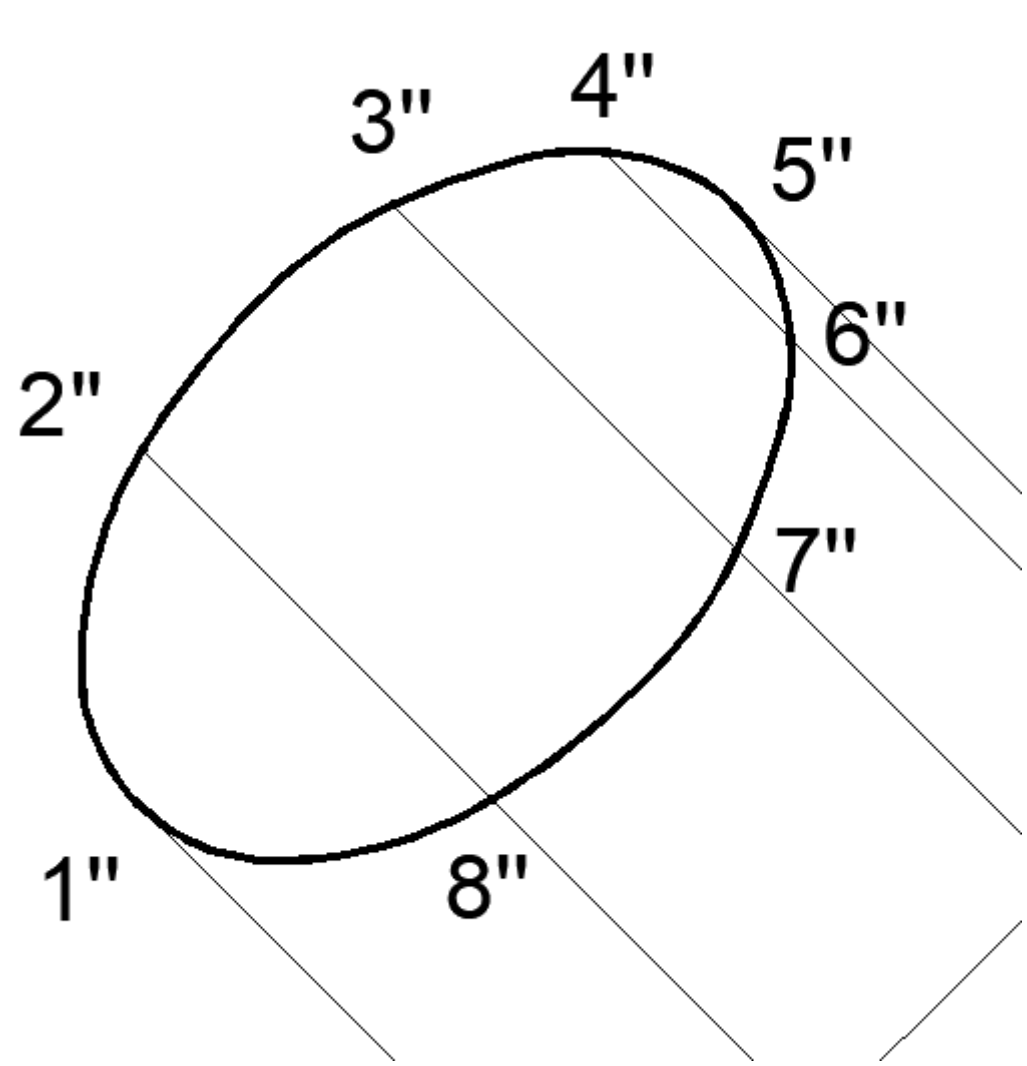
- Cone.
- 60mm diameter & 70mm height.
- Resting on its base on HP.
- Section plane is AIP at 45°.
- Bisecting the axis.

Steps Involved

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

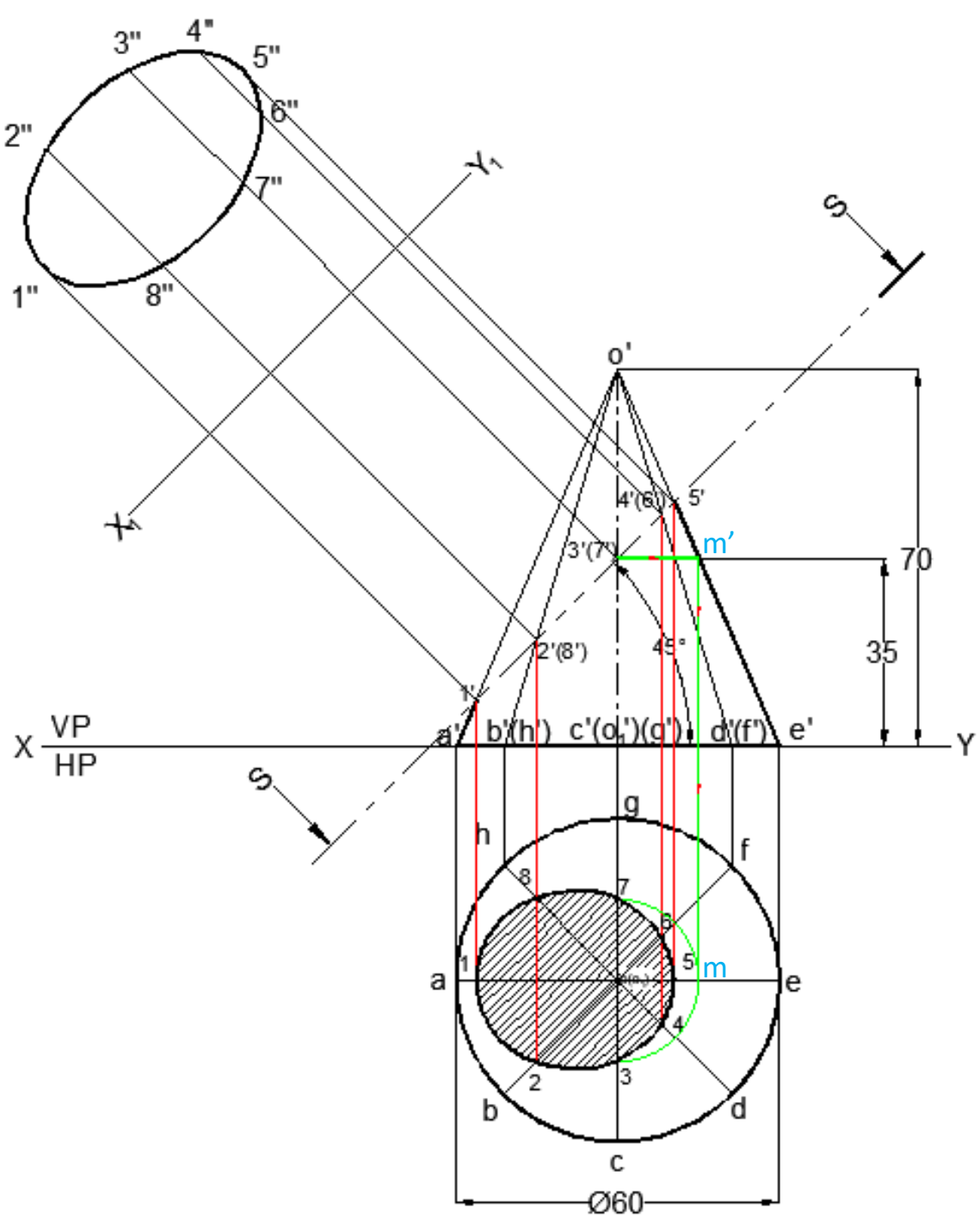






Steps Involved

- Join all the points using smooth curve



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