



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 pentagonal pyramid, with base 30mm side and axis 70mm long is resting on its base on HP with an edge of the base parallel to VP and nearer to VP. It is cut by an AIP inclined at 60° to HP bisecting the axis of the pyramid. Draw the sectional top view, and true shape of the section.

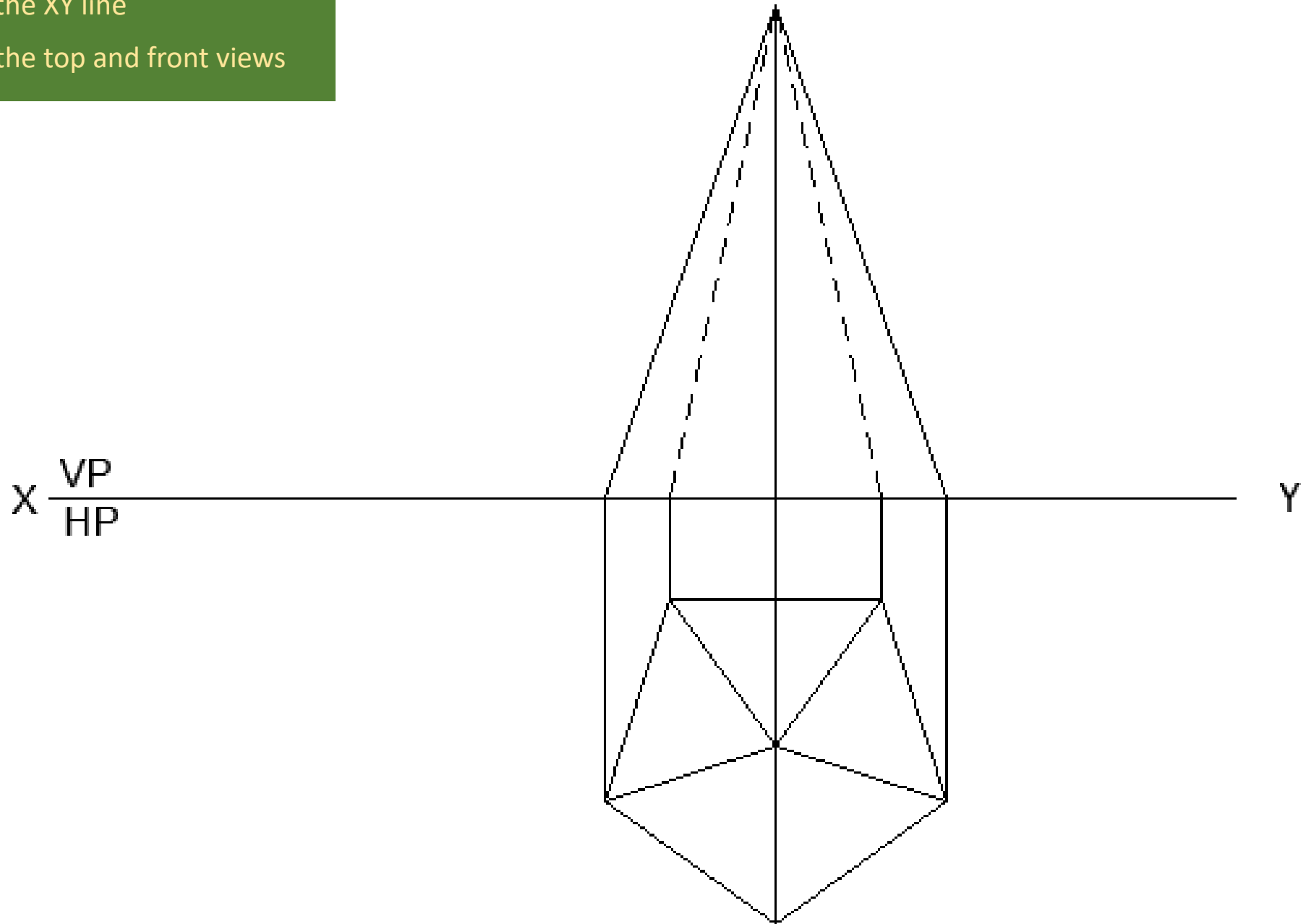
Data

- Pentagonal Pyramid.
- 30mm side & 70mm height.
- Resting on its base on HP and one edge of the base parallel to VP and nearer to it.
- Section plane is AIP at 60° .
- Bisecting the axis.

A pentagonal pyramid, with base 30mm side and axis 70mm long is resting on its base on HP with an edge of the base parallel to VP and nearer to VP. It is cut by an AIP inclined at 60° to HP bisecting the axis of the pyramid. Draw the sectional top view, and true shape of the section.

Steps Involved

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



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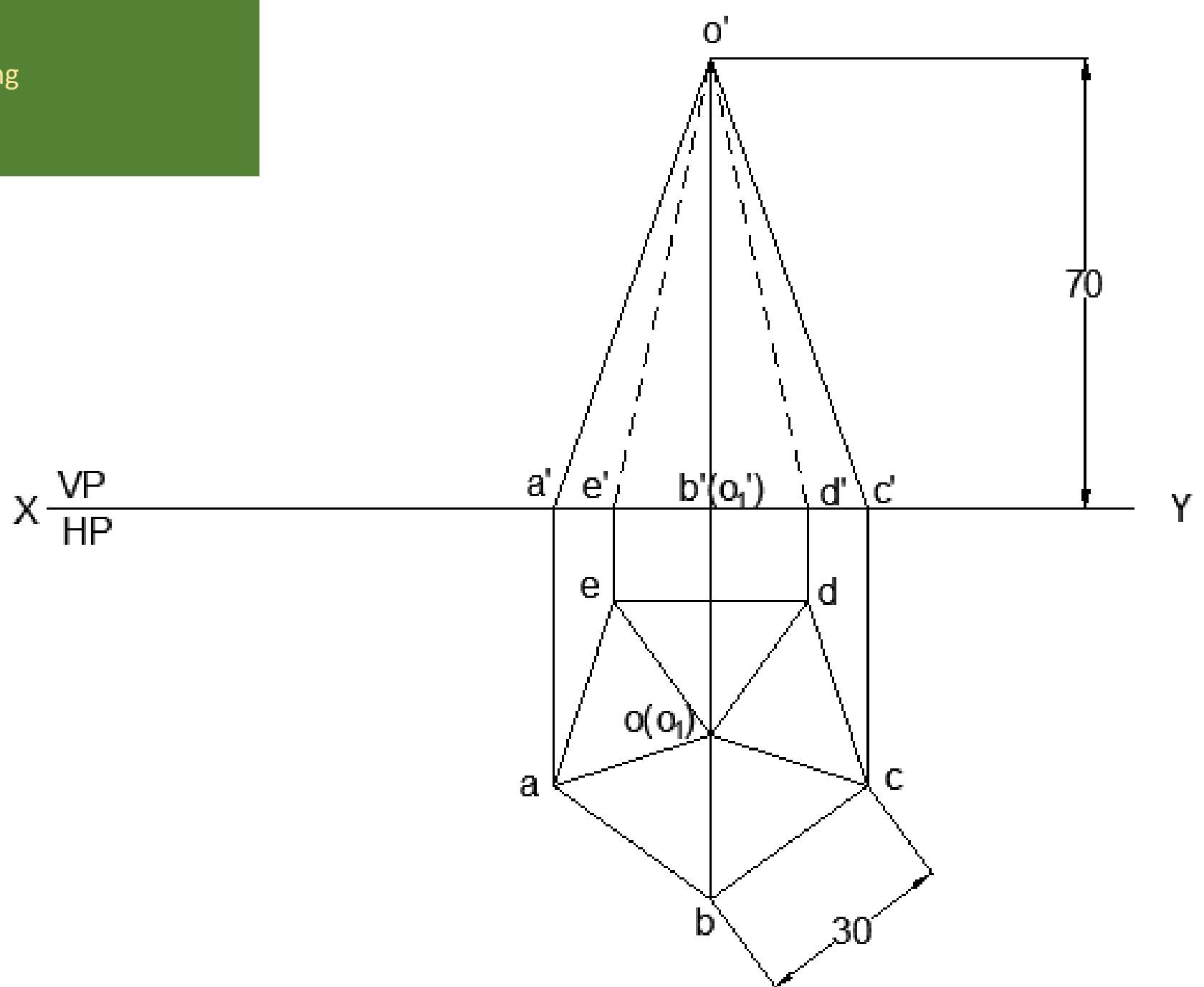
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Steps Involved

- Dimensioning
- Naming

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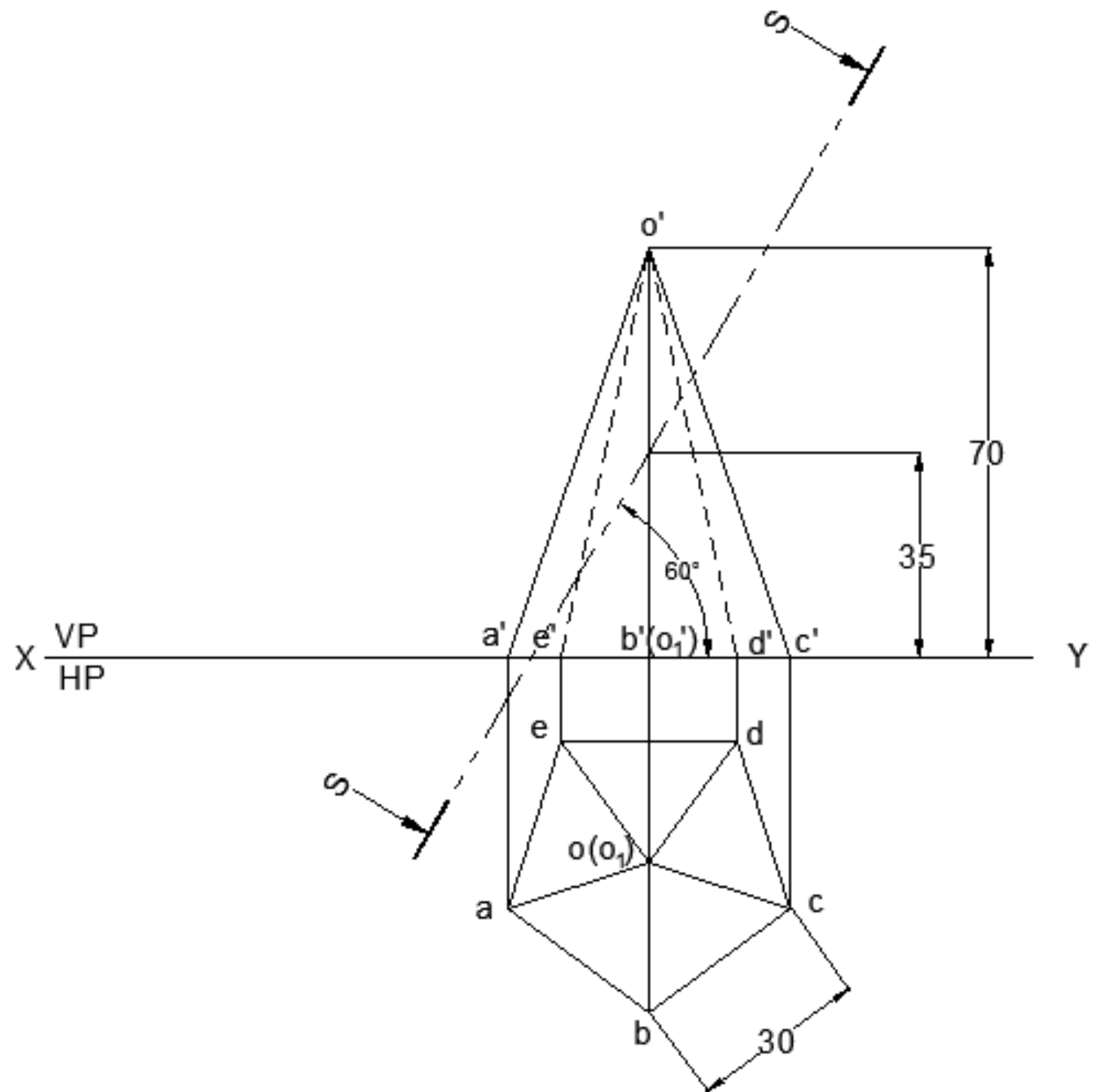
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Steps Involved

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

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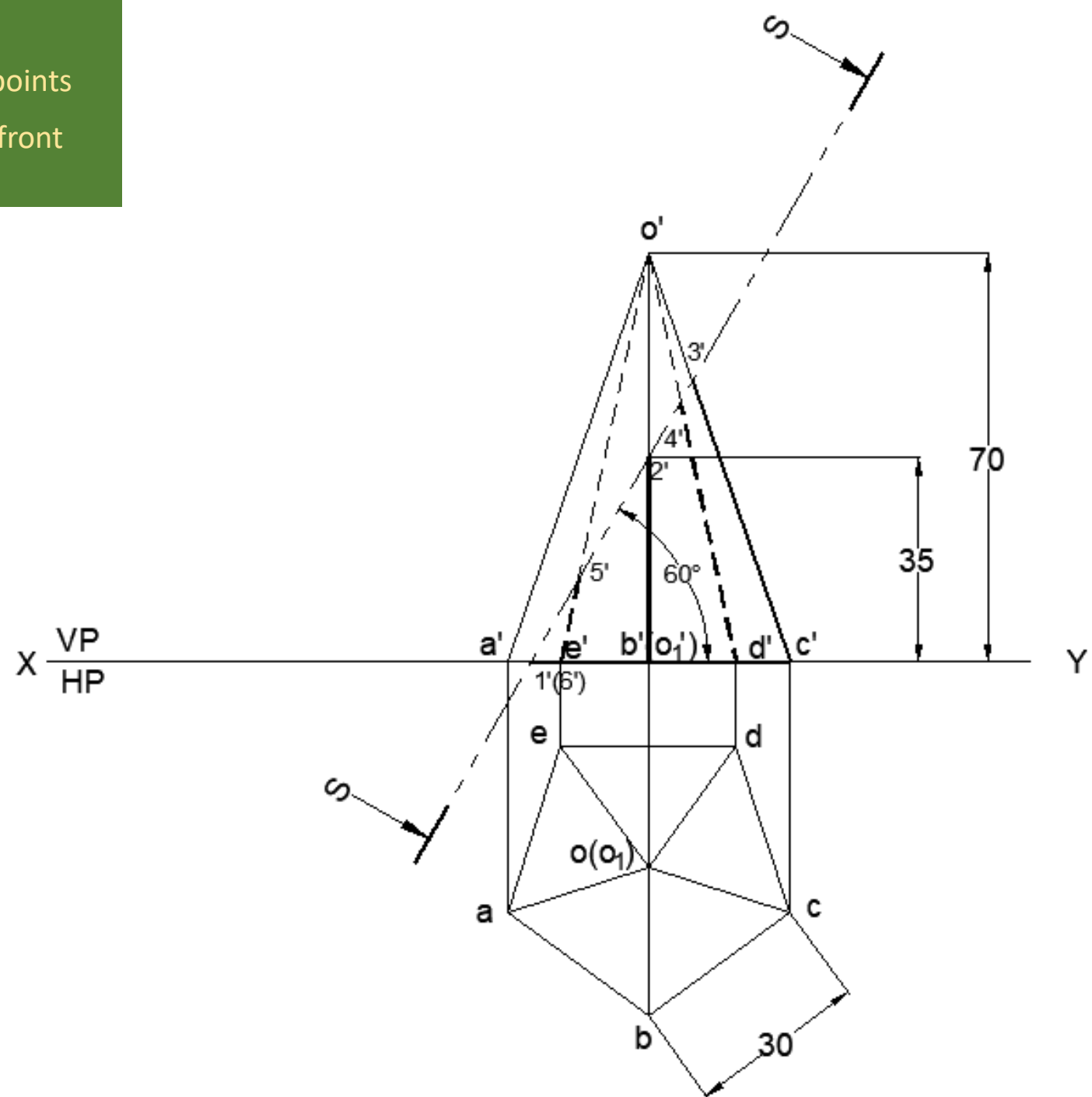
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Steps Involved

- Identify & number the cutting points
- Darken the retained portion in front view

Data

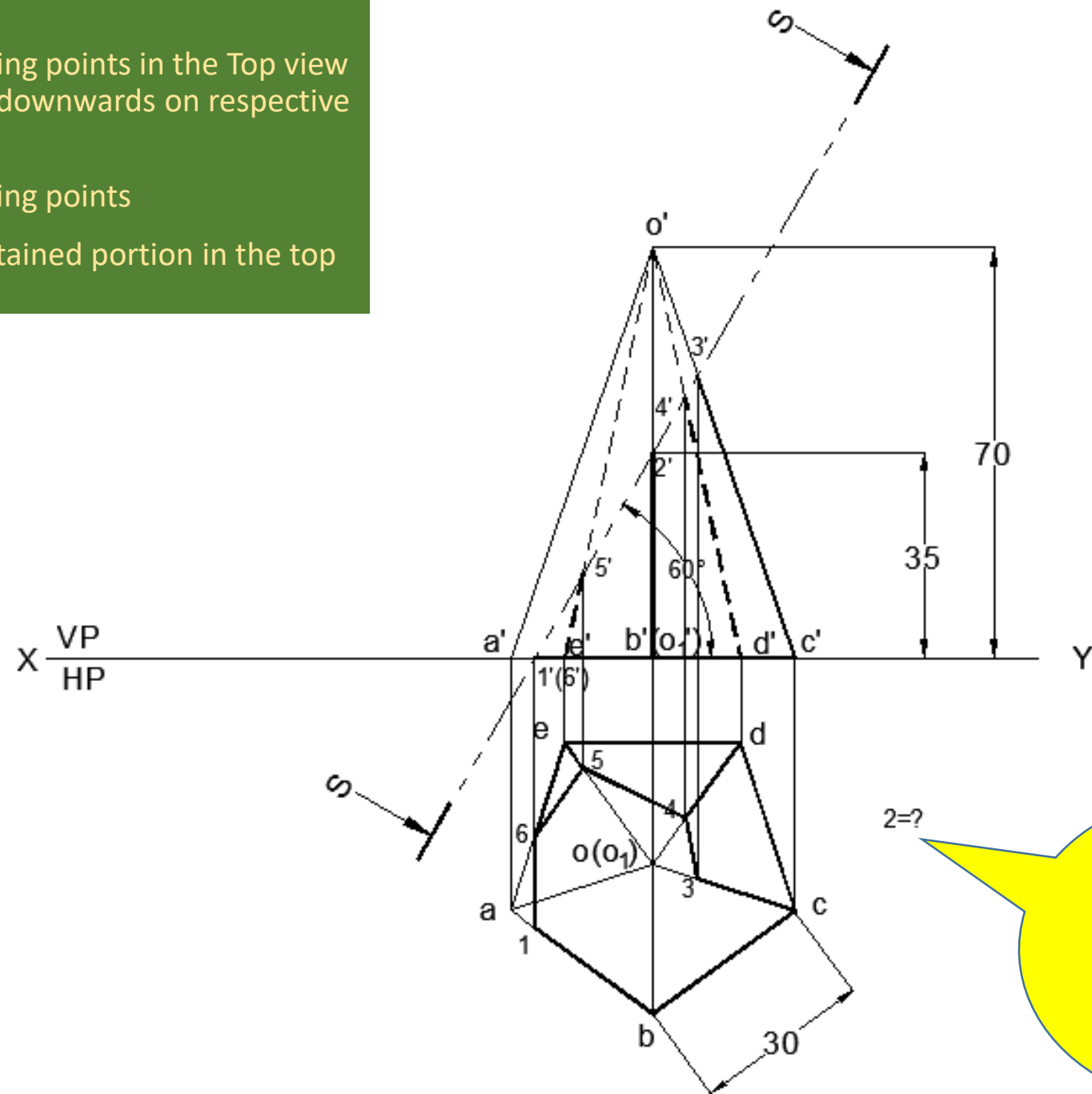
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Steps Involved

- Mark the cutting points in the Top view by projecting downwards on respective slant edges
- Mark the cutting points
- Darken the retained portion in the top view



Data

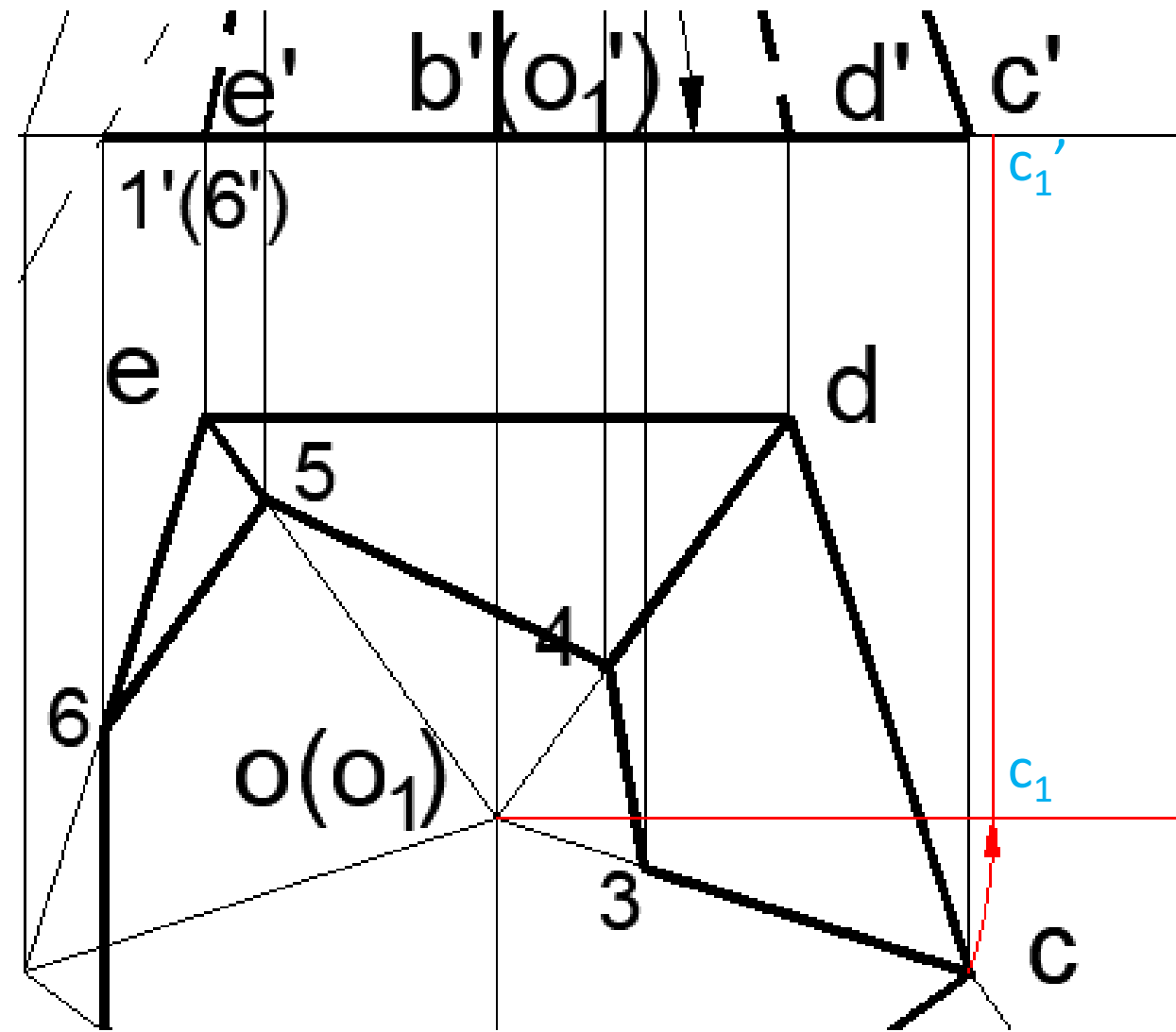
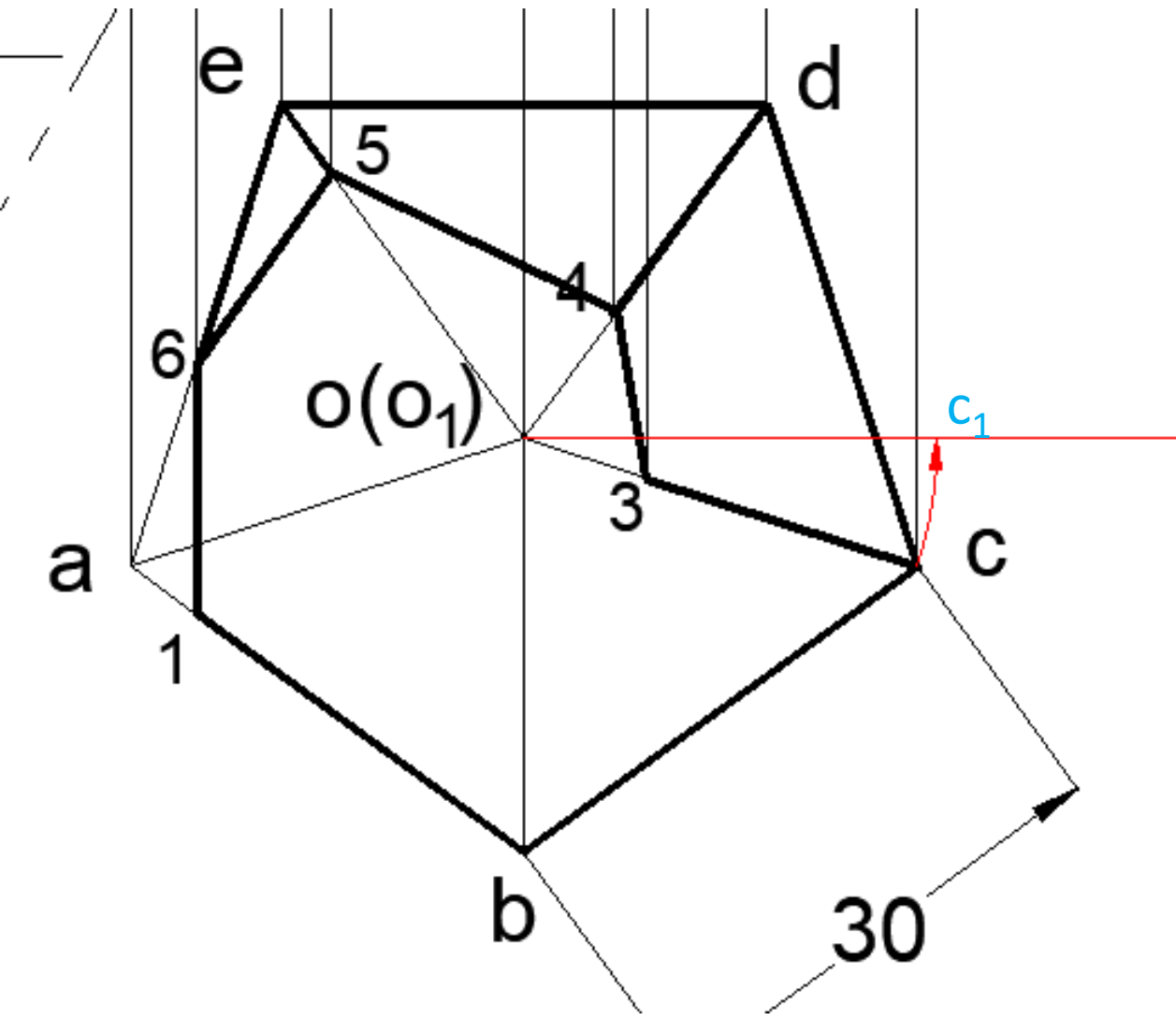
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2=?

Since oc is not parallel to VP, $2'$ cannot be directly projected on to $o'c'$ as it is apparent length of slant edge $o'c'$

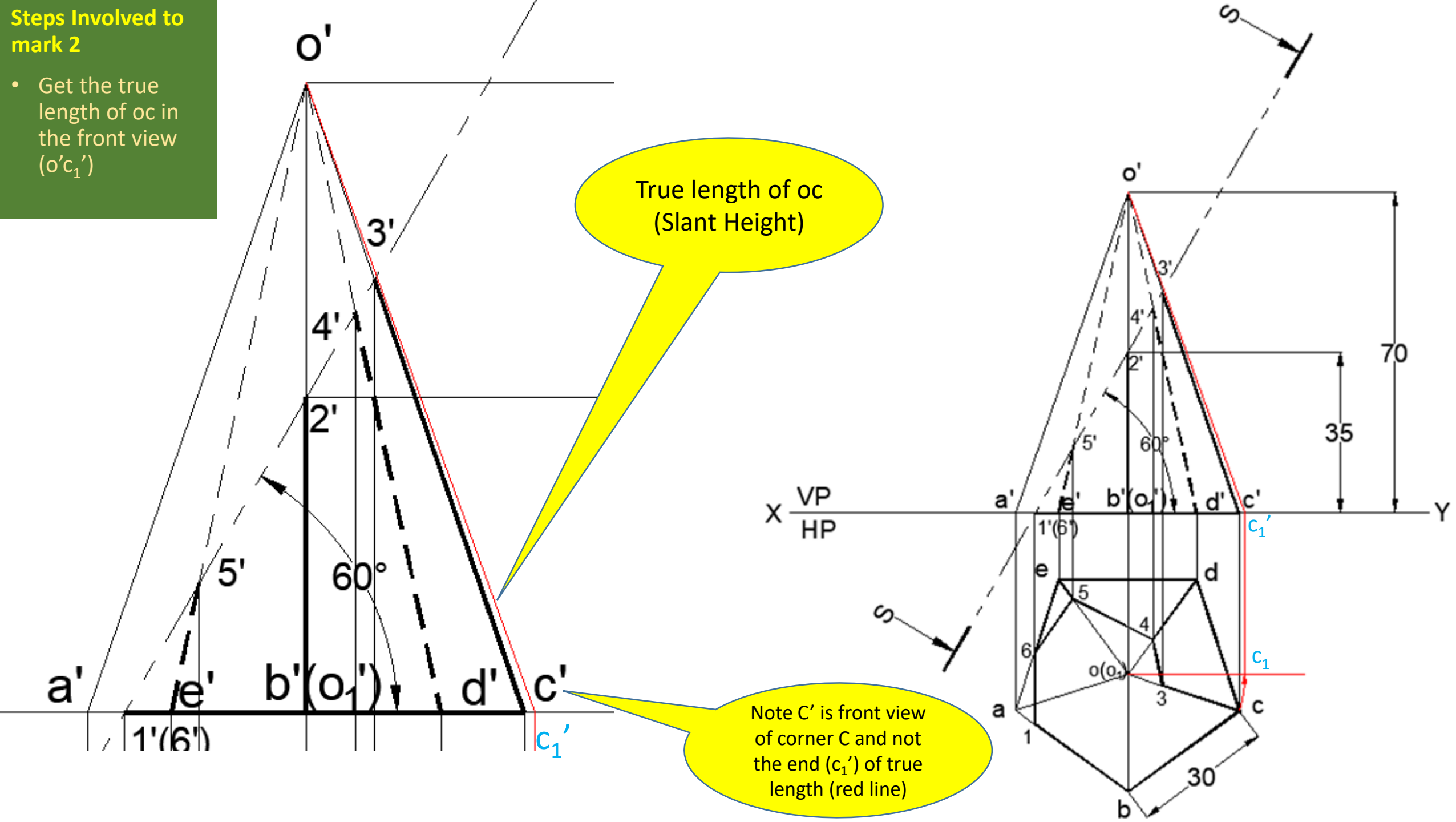
Steps Involved to mark 2

- Rotate OC to make it parallel to VP as shown
- Project it upwards to meet XY line



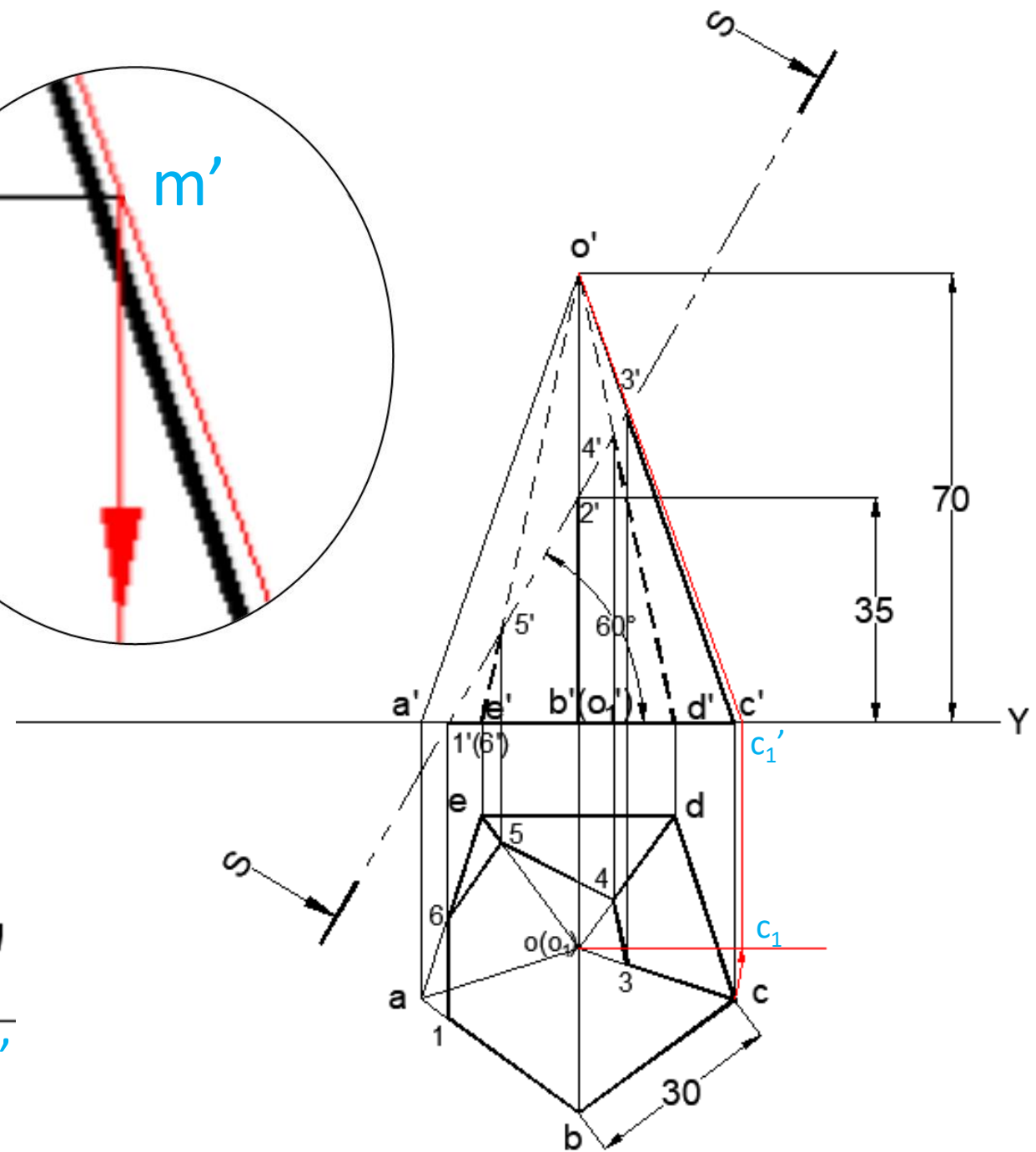
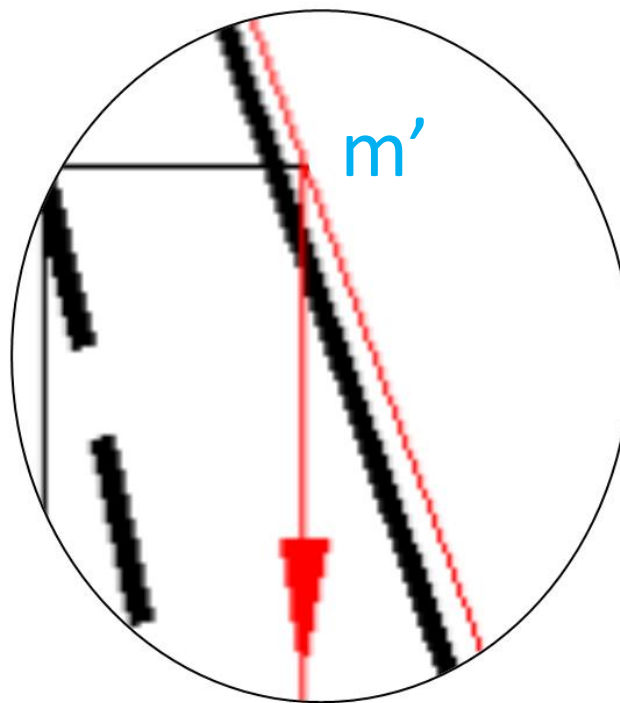
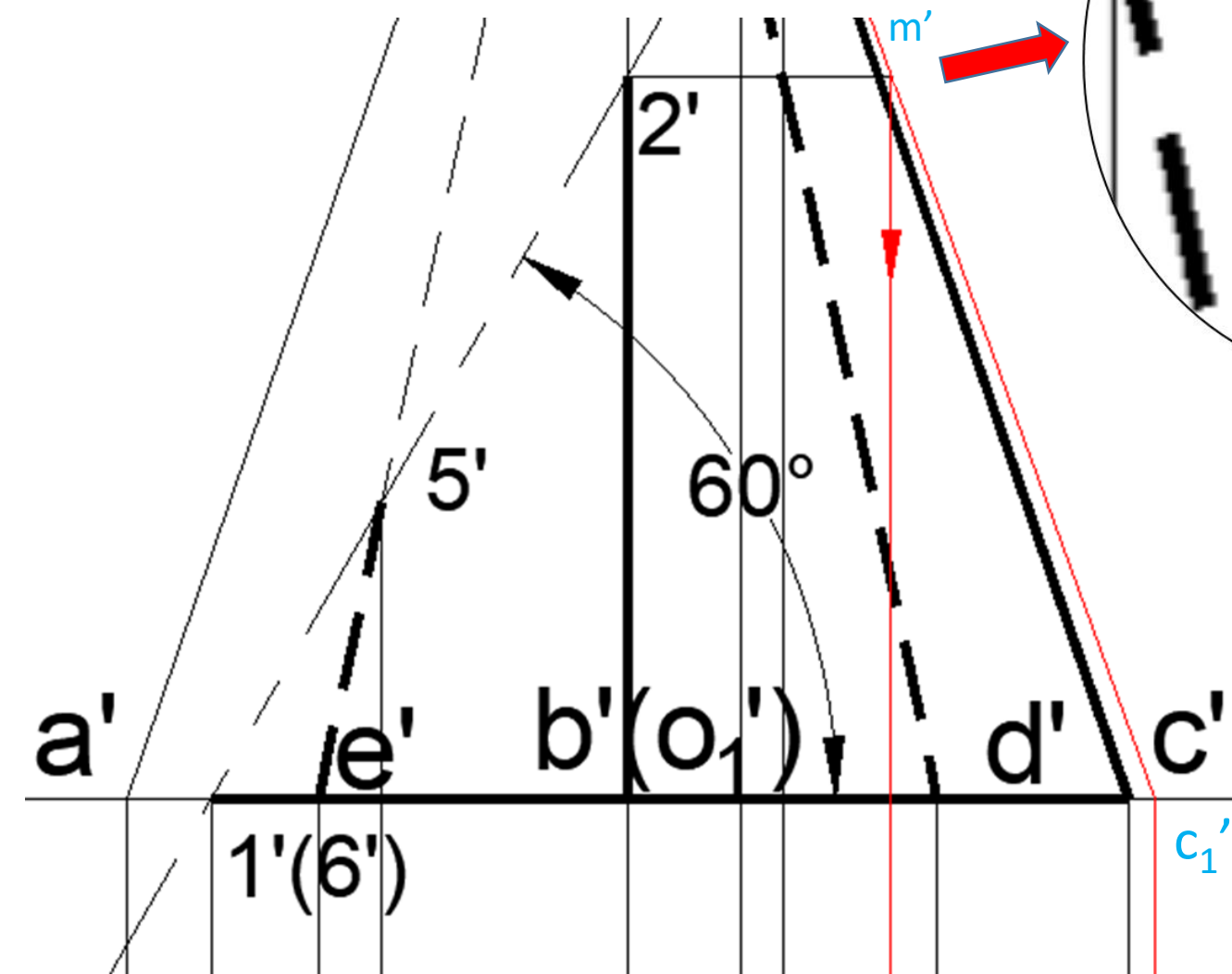
Steps Involved to mark 2

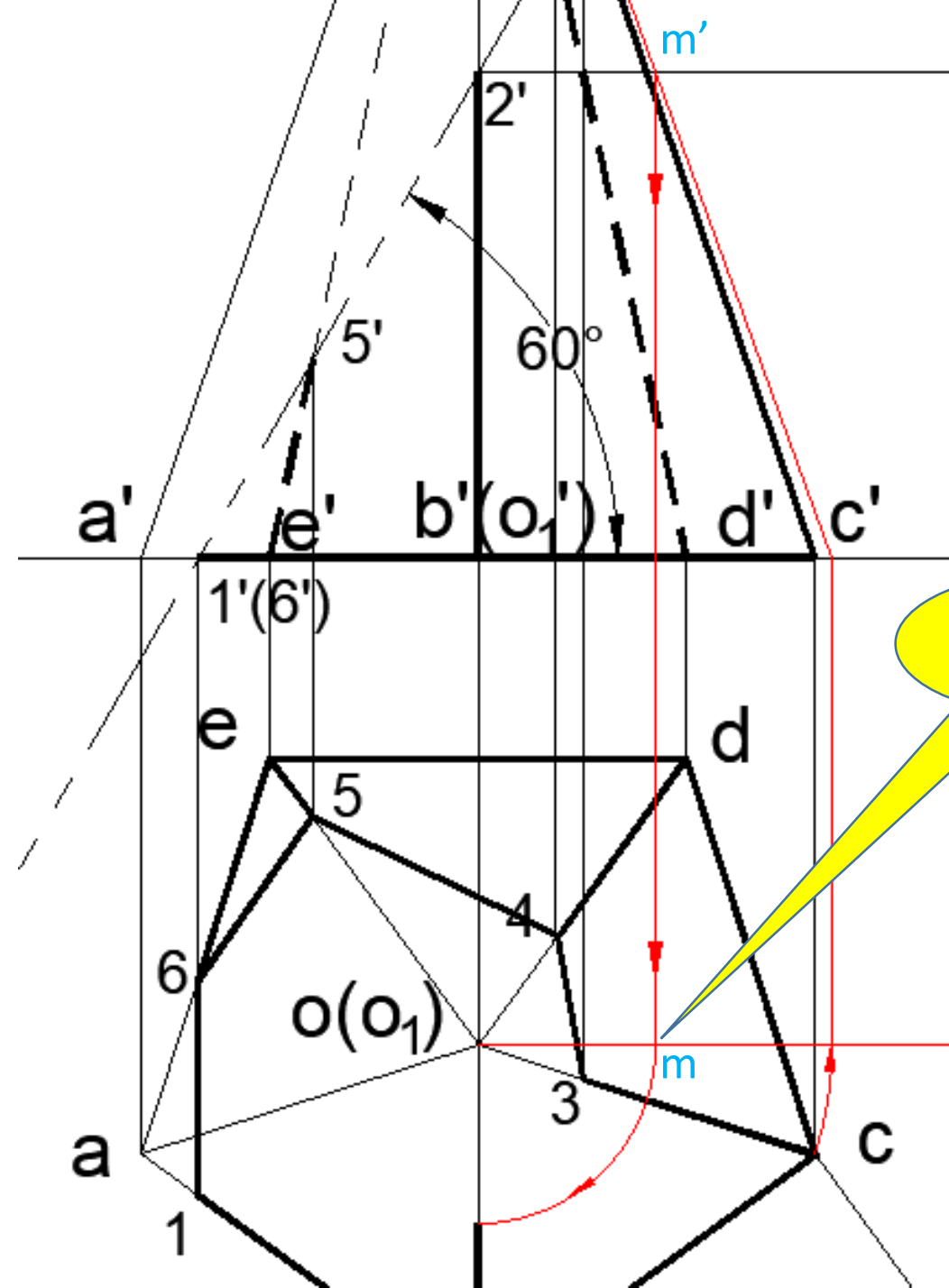
- Get the true length of oc in the front view ($o'c_1'$)



Steps Involved to mark 2

- Project 2' horizontally on to the true length (red line) to get m'
- Project it downwards

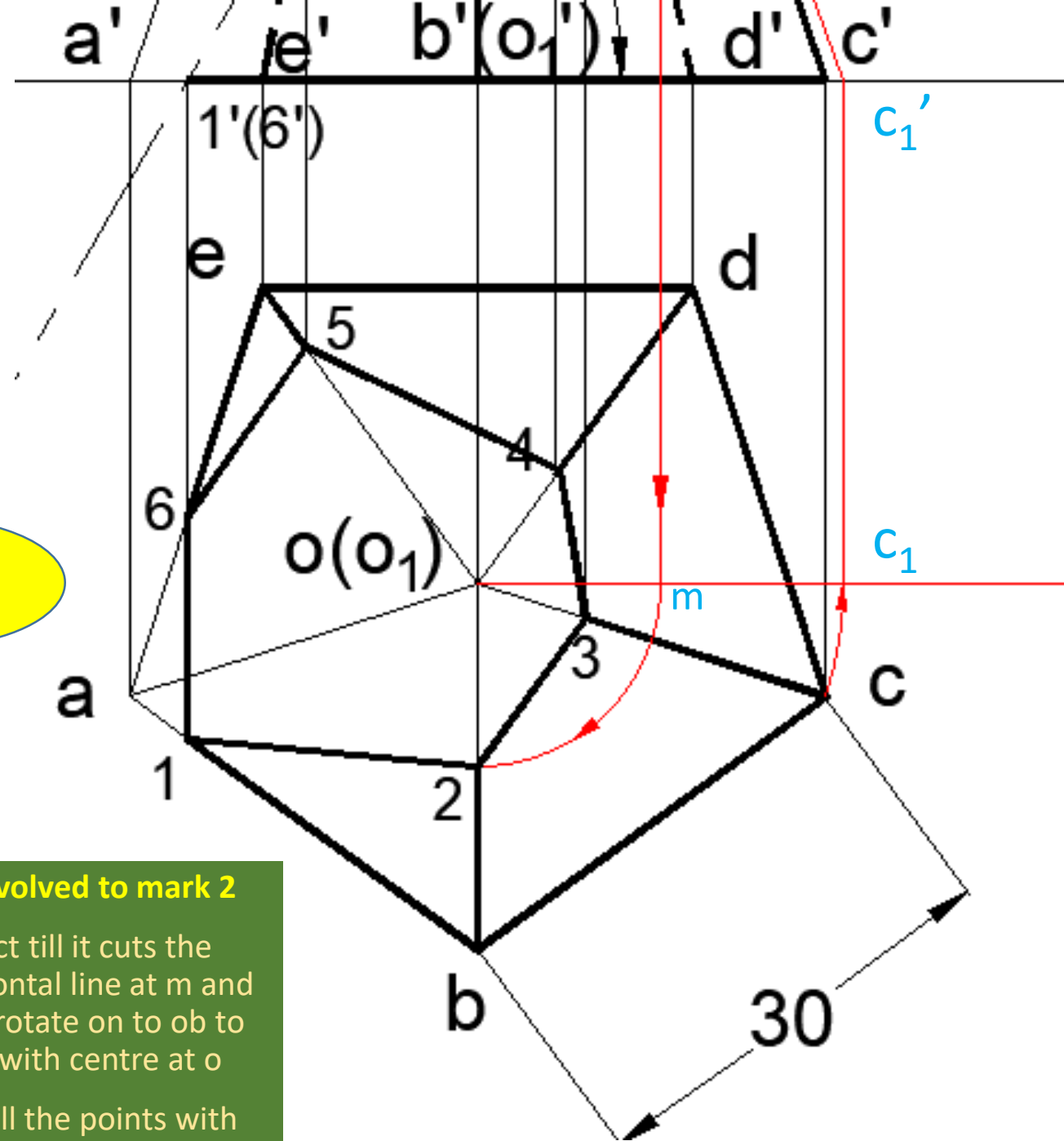




Project
downward
till here

Steps Involved to mark 2

- Project till it cuts the horizontal line at m and then rotate on to ob to get 2 with centre at o
- Join all the points with straight lines



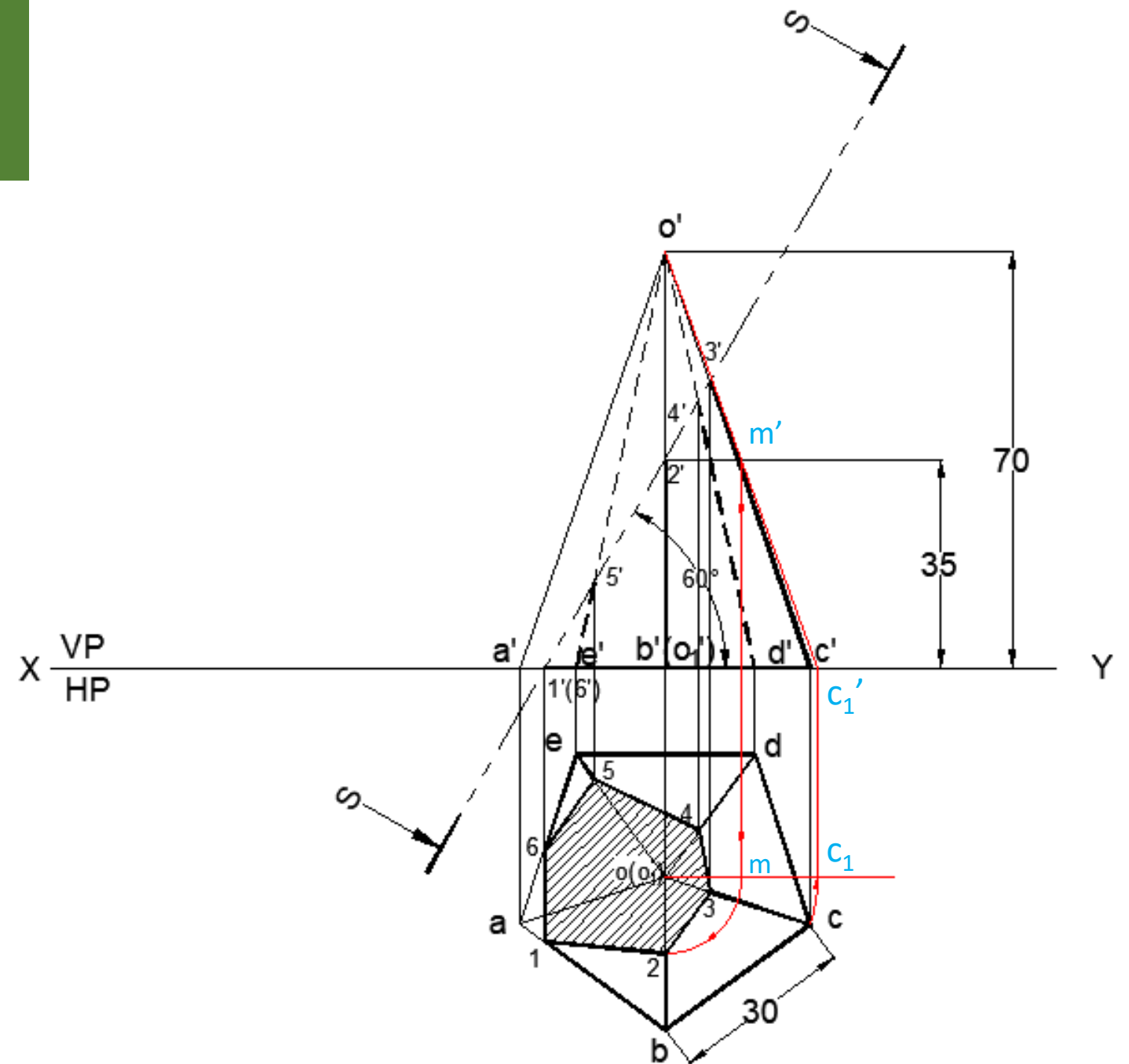
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Steps Involved

- Hatch the cut portion

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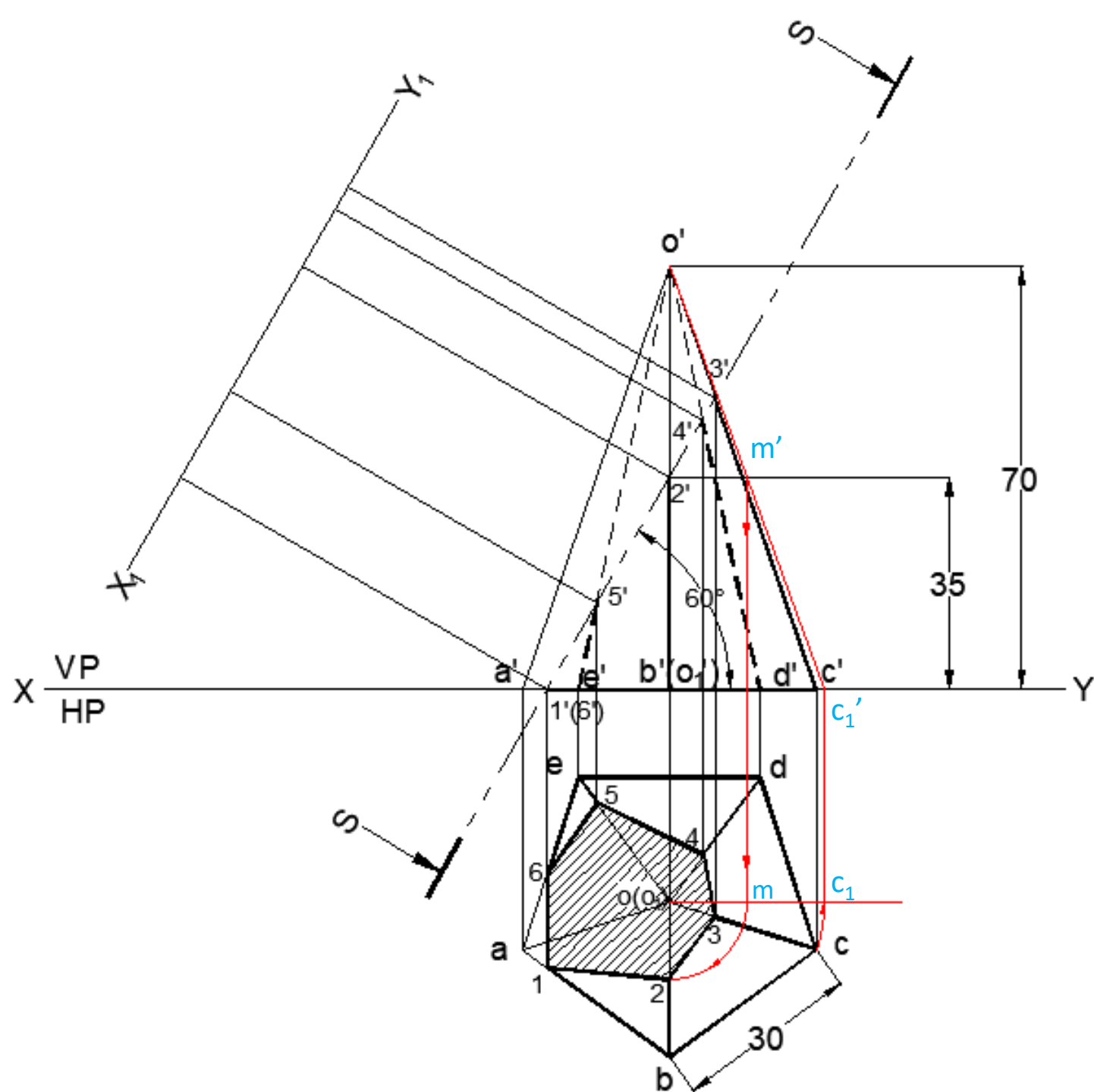
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Steps Involved

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

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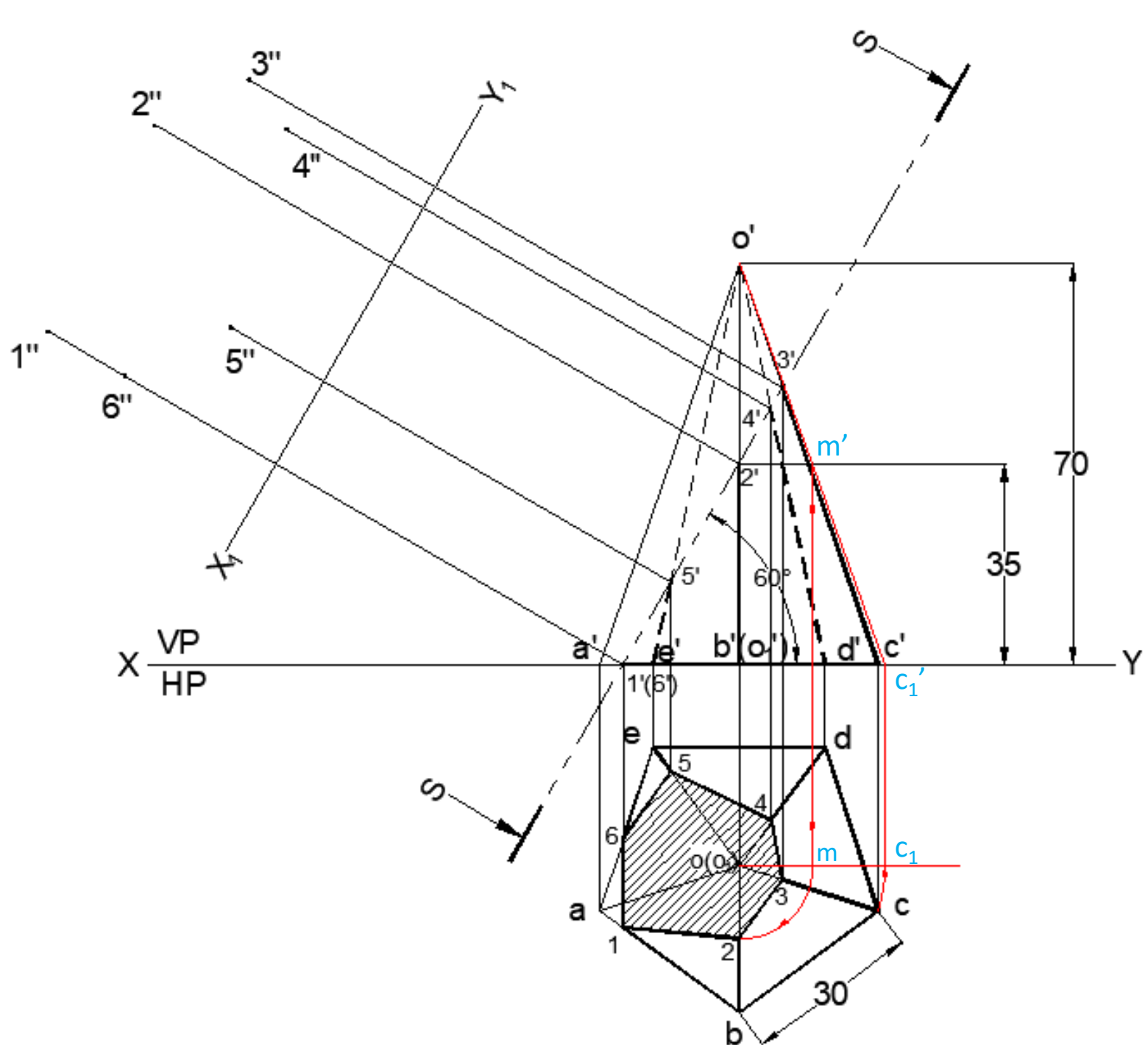
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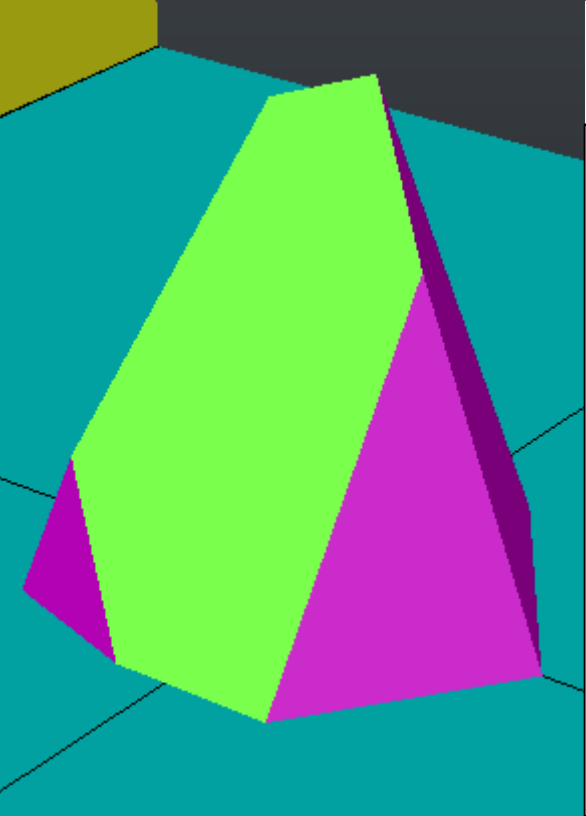
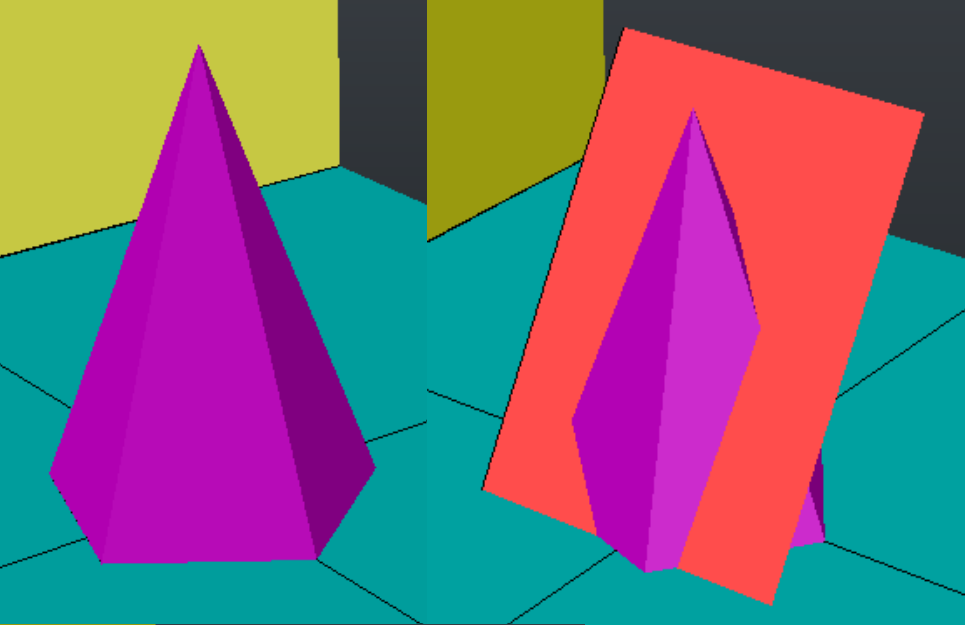
Steps Involved

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

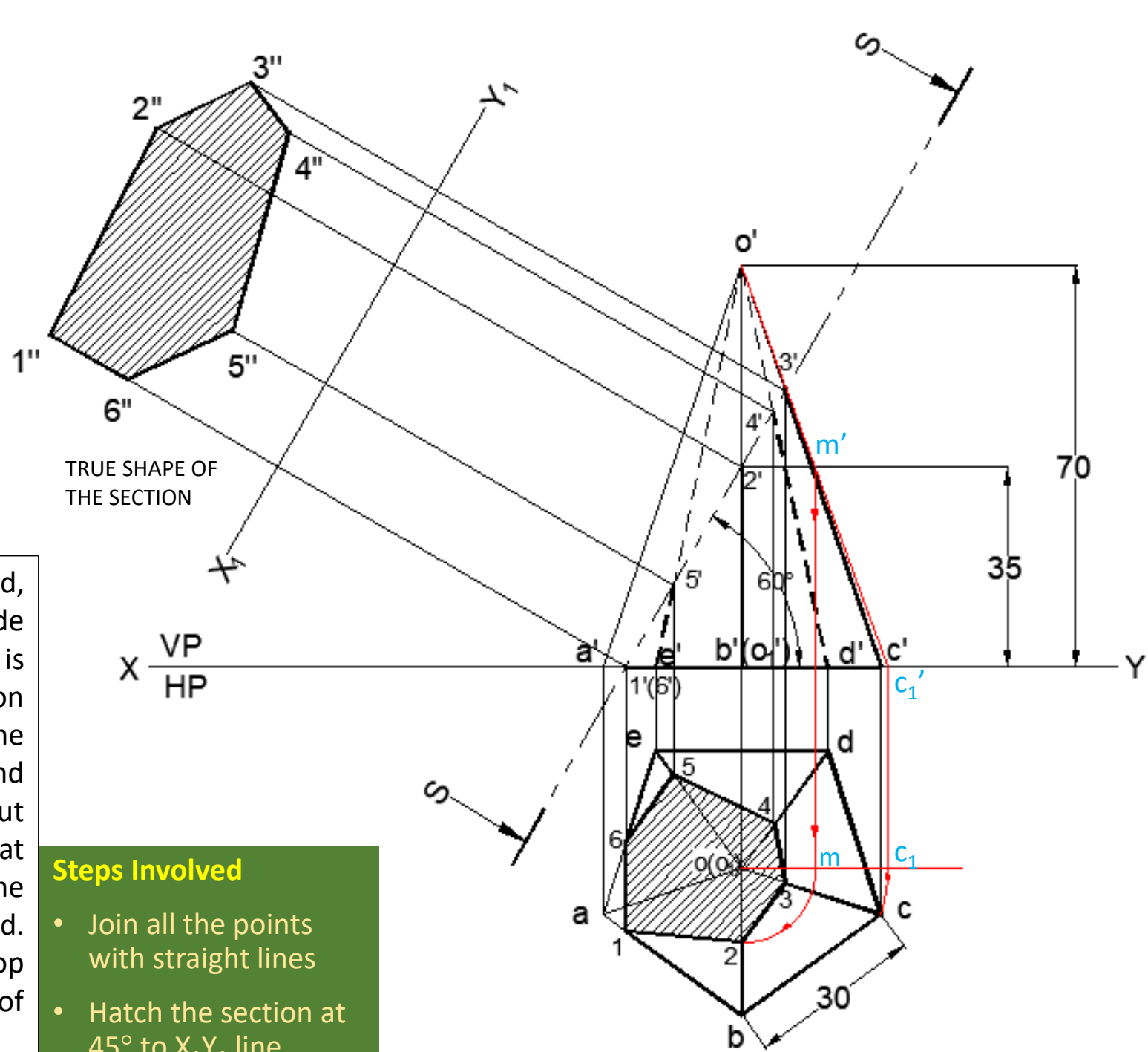
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Steps Involved

- Join all the points with straight lines
- Hatch the section at 45° to X_1Y_1 line