Pyramid :- This is a polyhedron having a plane figure as a base and a number of triangular faces meeting at a point called the vertex or apex. The imaginary line joining the apex with center of the base is its axis.

Development of surfaces of solids:

Assume an object hollow and made up of thin sheet. Cut open it from one side and unfold the sheet completely. Then the shape of that unfolded sheet is called 'Development of lateral surface' of that object or solid.

Lateral surface :- is the surface excluding solid's Top and base.

Development of Lateral Surfaces of Solids

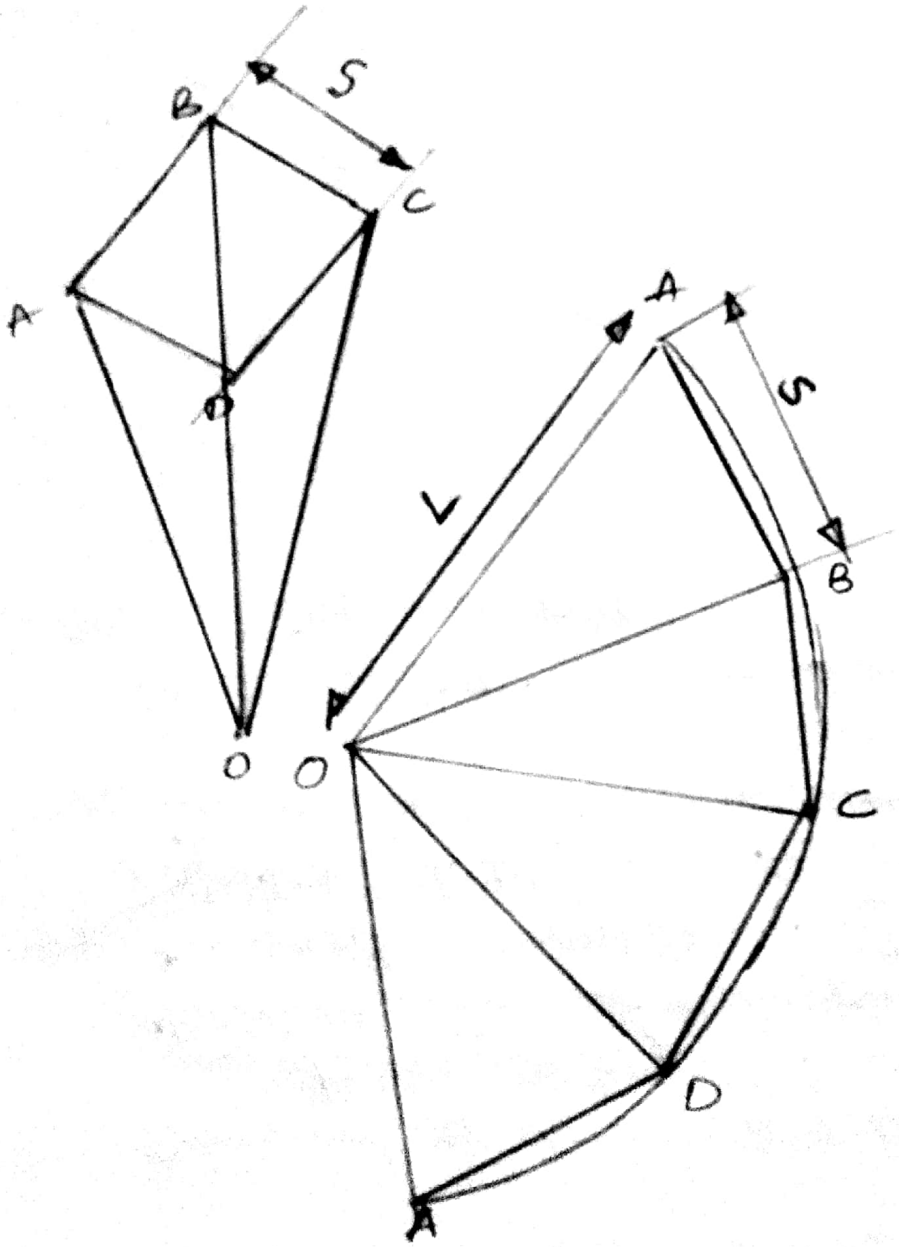
PLACE EACH TRIANGULAR FACE ONE BESIDE THE OTHER

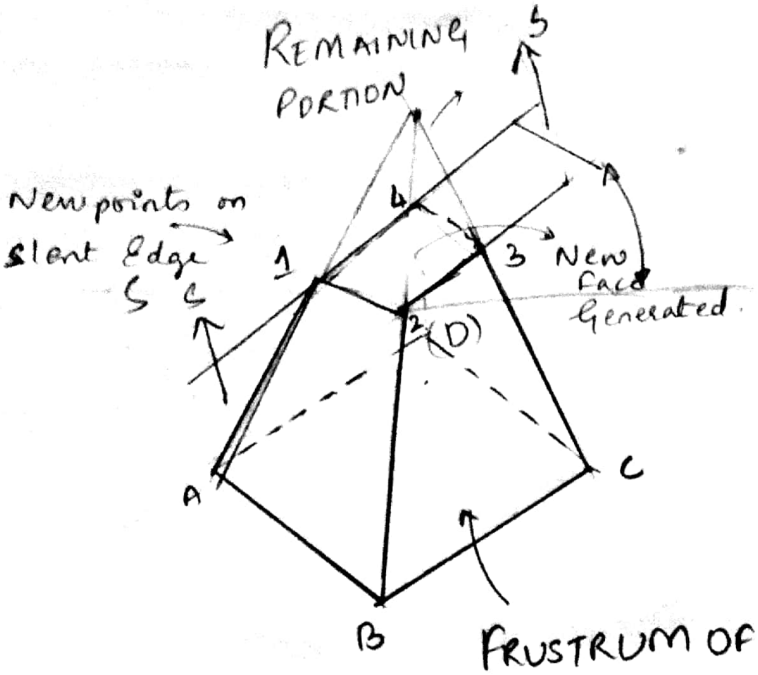
USING LENGTH OF THE SLANT EDGE AS RADIUS

L = Slant edge

S = Edge of Base

L = True length of slant edge





FRUSTRUM OF A PYRAMID

Fig:- A
A SQUARE PYRAMID WITH SECTION PLANE

Section plane Perpendicular to VP and inclined to HP

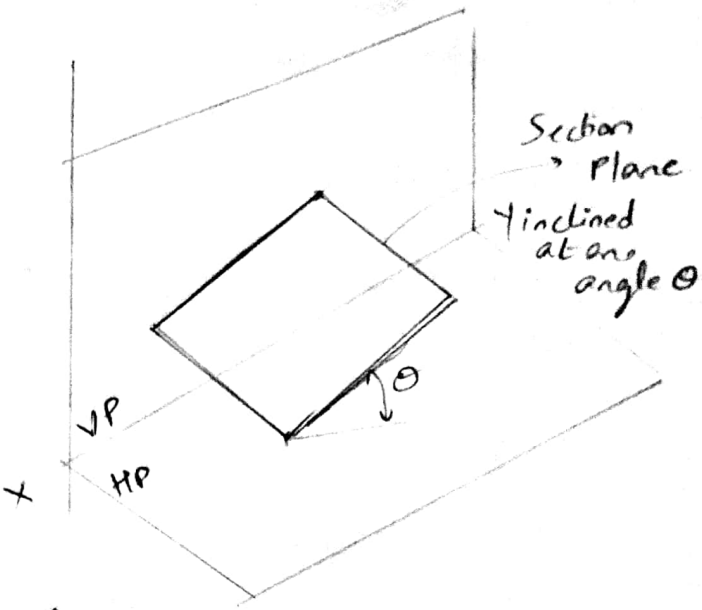
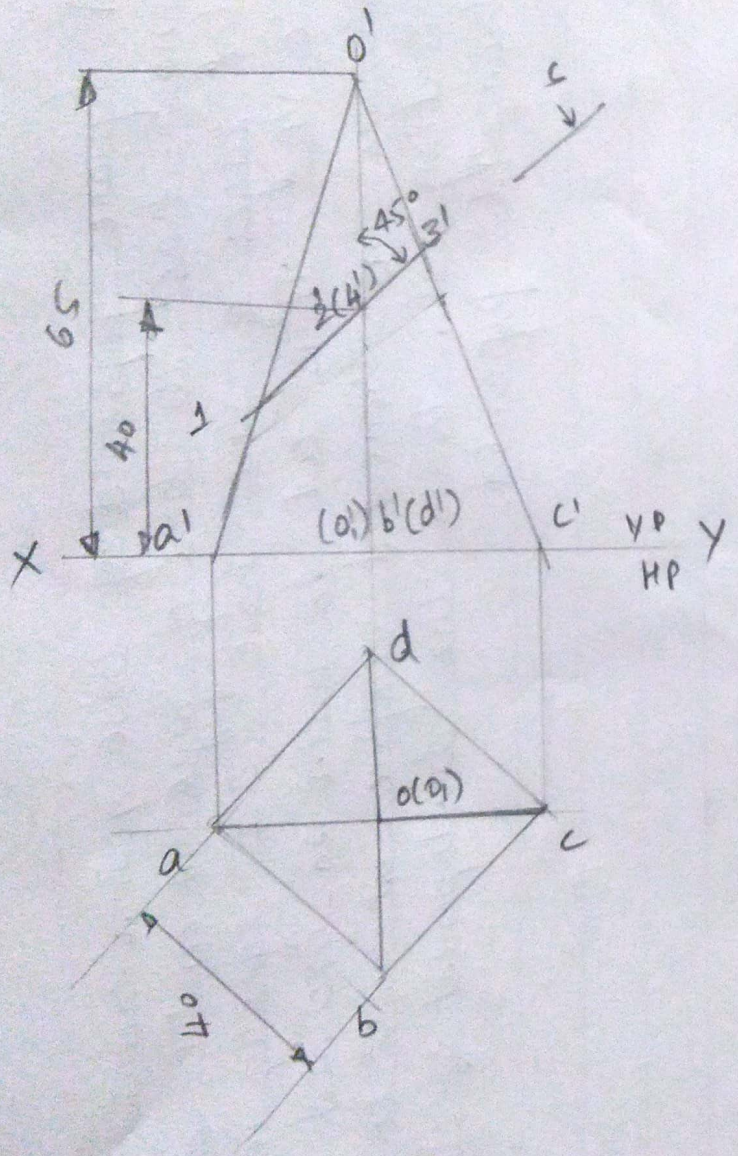


Fig: B
SHOWING SECTION PLANE INCLINED TO HP

A square pyramid of base 40 mm and axis 65 mm long has its base of pyramid on HP and all the edges of the base are equally inclined to VP. It is cut by a plane inclined at 45° to the axis, bisecting it. Draw the development of the truncated pyramid.

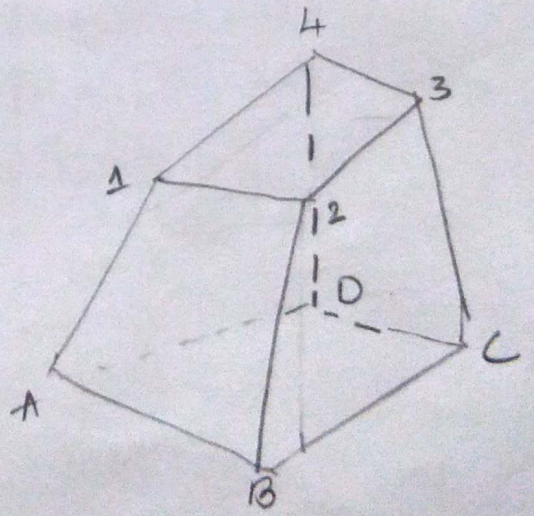
Step 1



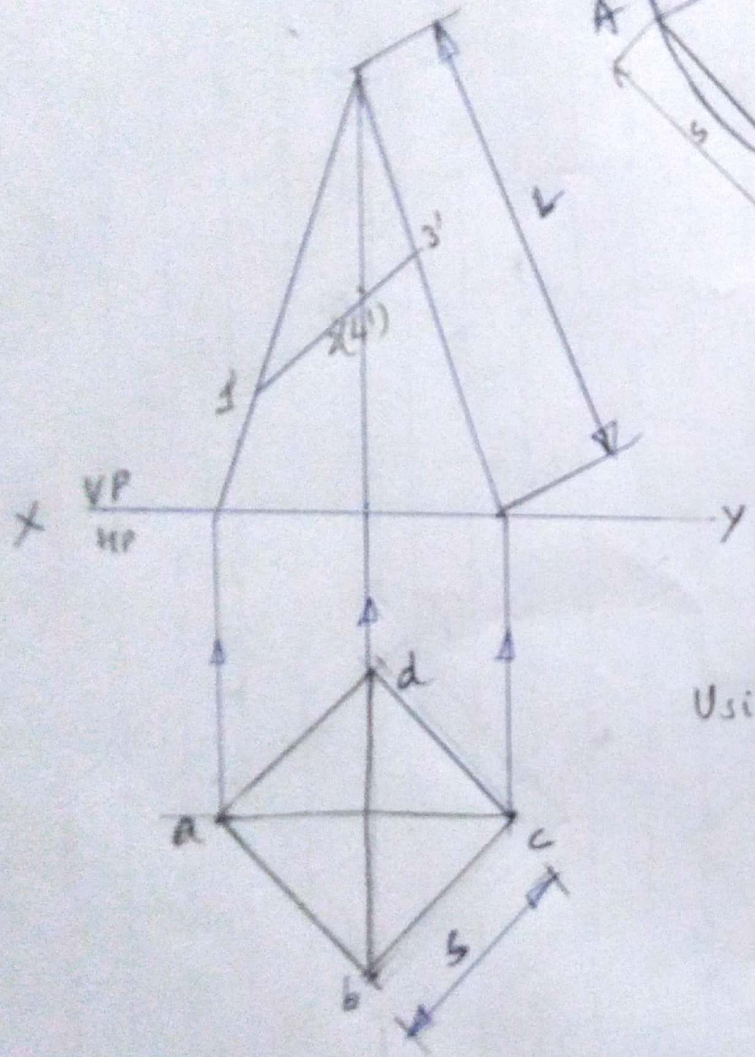
1> According to problem statement Draw the Front View and Top View As per the following diagram (Step 1)

2> Consider the distance of 32.5mm On the axis line; At this distance Draw a section plane at an angle 45°

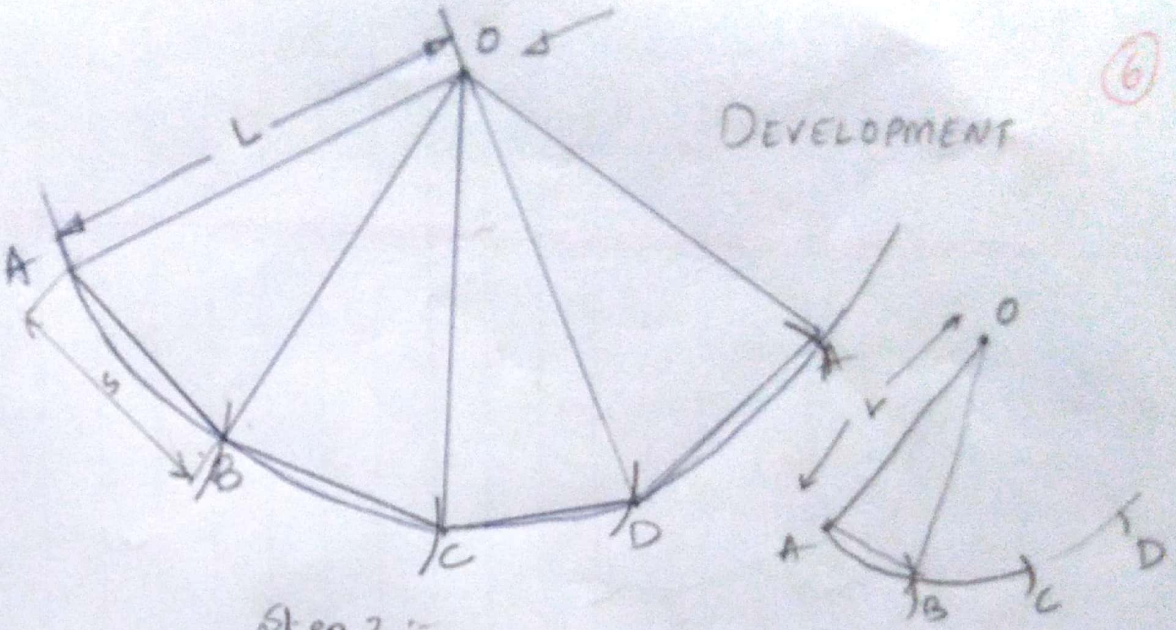
3> Consider the new points generated on the truncated pyramid by numbering them on slant edges



Step 2 :-



DEVELOPMENT



Step 2 :-

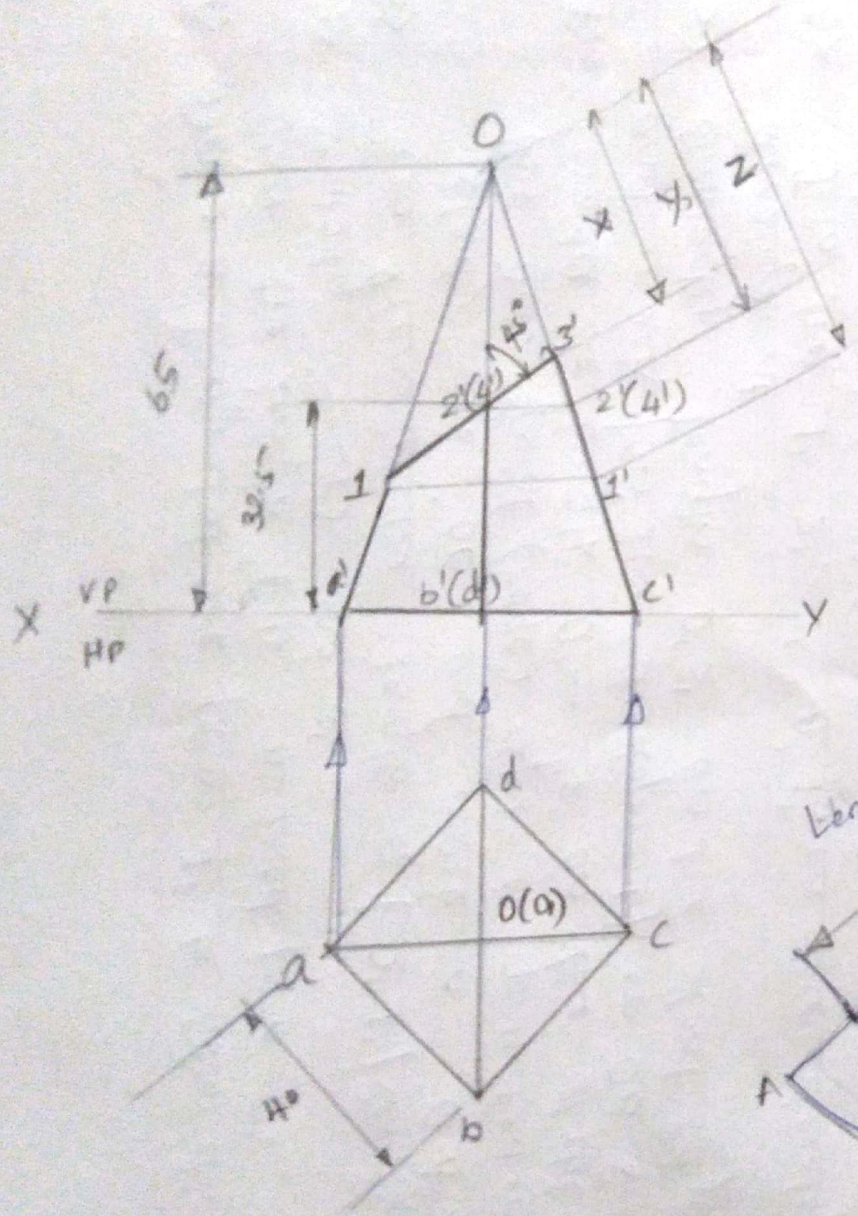
1) AFTER IDENTIFYING THE POINTS NOW LET US DRAW THE DEVELOPMENT OF PYRAMID

1) Consider the length of slant Edge L Using Point O, take length L on the compass Draw an arc.

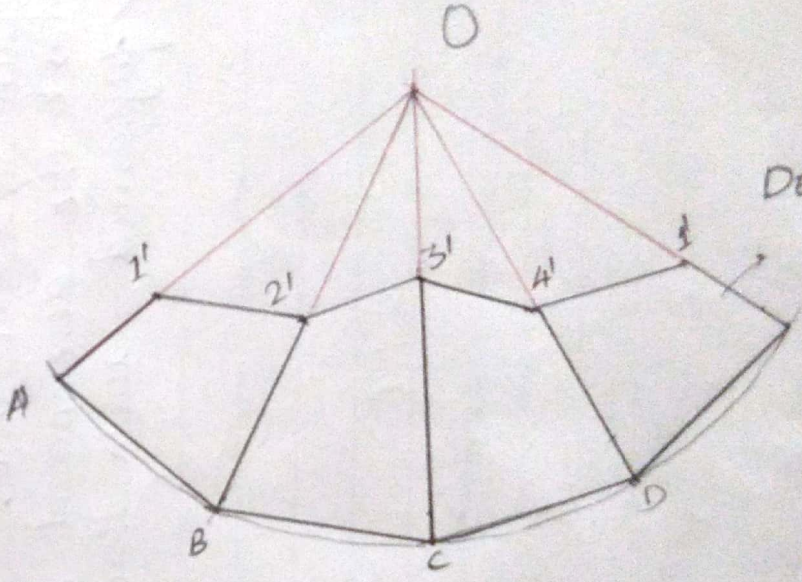
2) Consider the length of the base 'S' on the arc mark Points A, B, C, D of the base.

3) JOIN OAB, one of the faces of PYRAMID. Continue for other faces and Complete the development

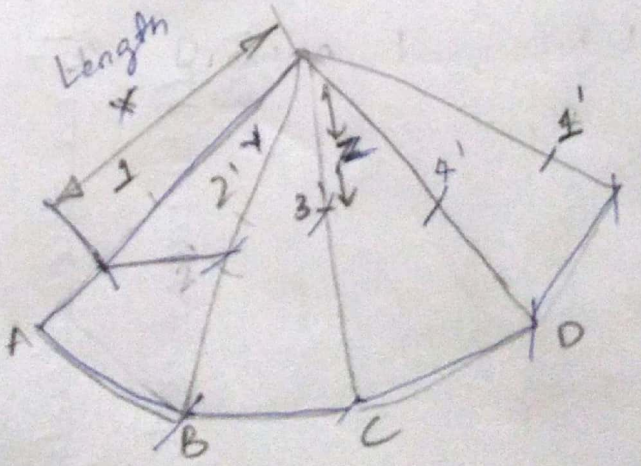
Step 3



FINAL DEVELOPMENT



DEVELOPMENT OF TRUNCATED PORTION OF PYRAMID



ALL DIM IN MM

1) Draw a horizontal line from 1' to intersection of O'C' since the length 'L' is considered from O'C'.
2) Similarly 2'(4') and 3'.
3) Then Consider the length of [O'1'] from the (on development) slant Edge 'OC' and mark on OA, since This new point (edge) of 1' is generated on OA
4) Consider the length O'— 2' on the slant Edge and mark [on the development] on OB & OD
5) Similarly length O'3' on the slant Edge OC of the development
6) Join the 1', 2', 3', 4', 1', on the development with straight line.
7) Mark the development of truncated portion of the pyramid with thick line