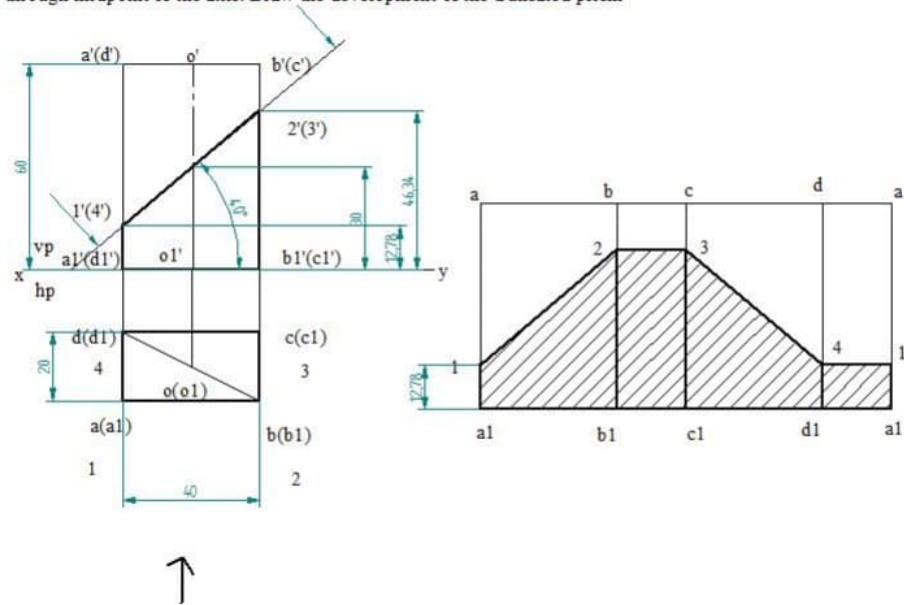
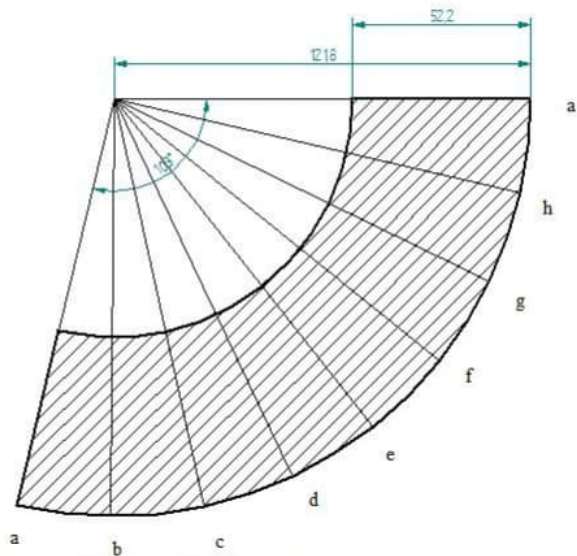
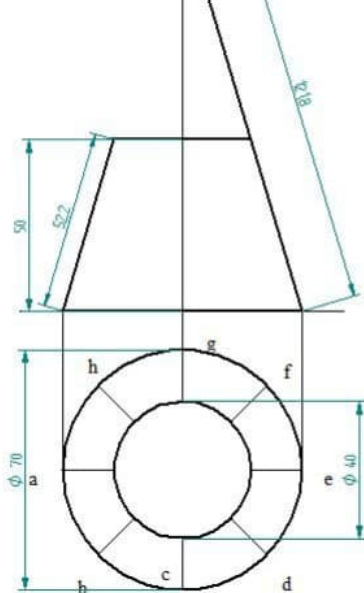


A rectangular prism of base side 20 mm x 40 mm and axis length 60 mm is resting on HP on its base such that the longer edge is parallel to VP. It is cut by a section plane inclined at 40 degrees to HP, perpendicular to VP and passing through midpoint of the axis. Draw the development of the truncated prism



Draw the development of a frustum of a cone of base diameter 70 mm, top diameter 40 mm and height 50 mm.

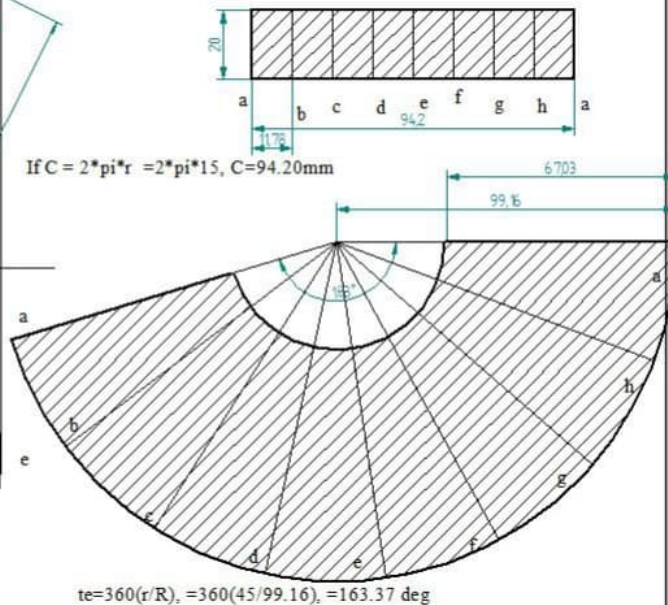


$$te = 360 \times (r/R) = 360(35/121.8) = 103.45 \text{ deg}$$

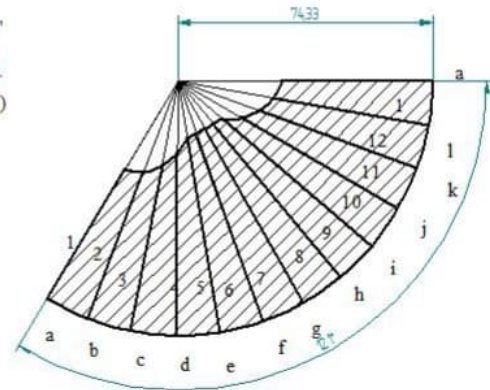
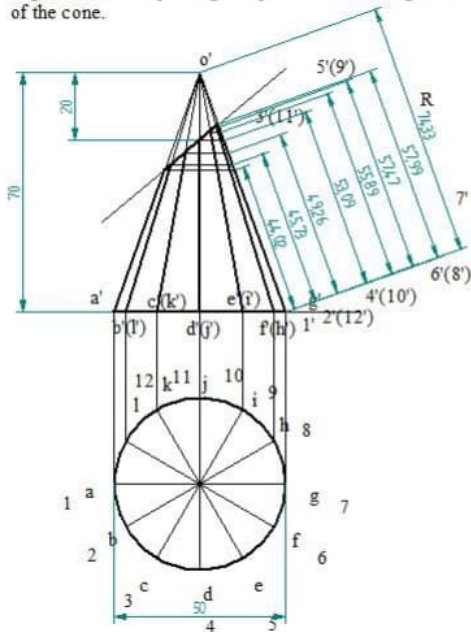
Orthographic projection of a mechanical part. The front view (top) shows a trapezoidal shape with a rectangular cutout. The top view (bottom) shows a circular base with a central octagonal hole. The side view (right) shows a triangular profile. Dimensions are given in millimeters.

Dimensions and labels:

- Front View:
 - Top width: 45
 - Left height: 60
 - Left slant height: 57.16
 - Right slant height: 93.16
 - Rectangular cutout height: 20
- Top View:
 - Outer diameter: $\phi 90$
 - Inner octagonal hole diameter: $\phi 30$
 - Labels: a, b, c, d, e, f, g, h
- Side View:
 - Label: a

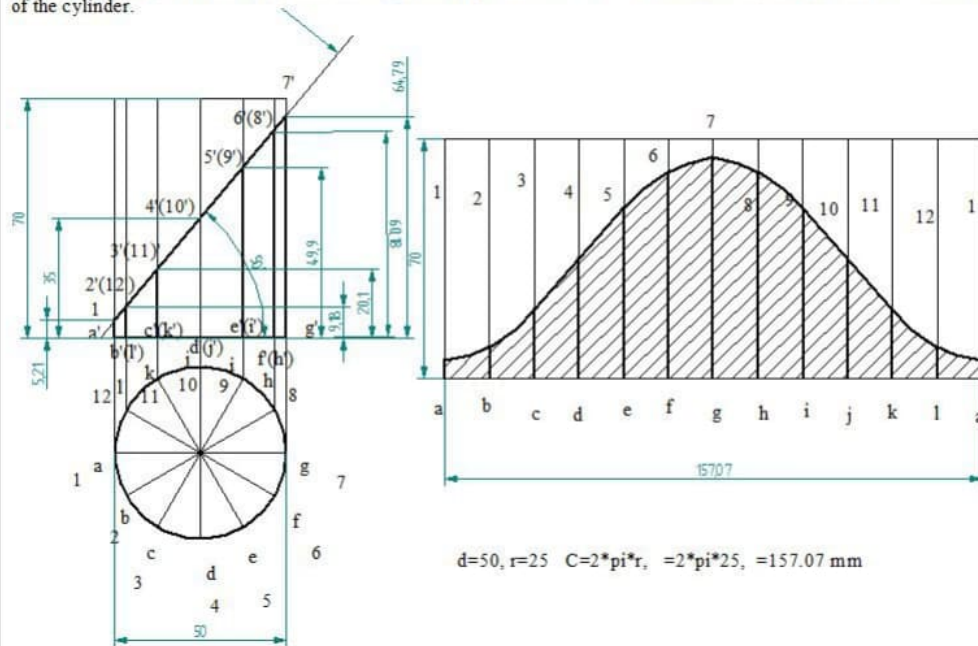


A cone base diameter 50 mm and axis length 70 mm is cut by a section plane perpendicular to VP, inclined at 40 degree to HP and passing at a point 20 mm along the axis from the apex. Draw the development of the lateral surface of the cone.

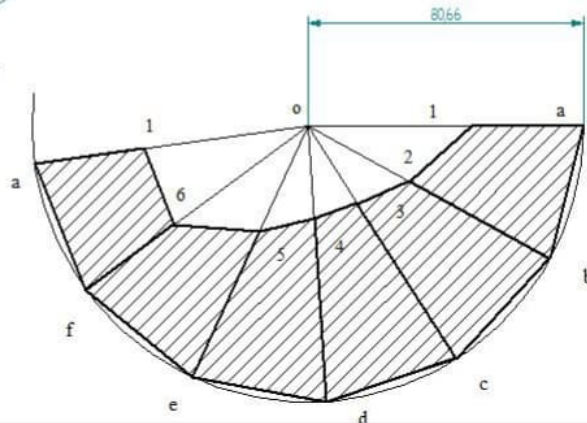
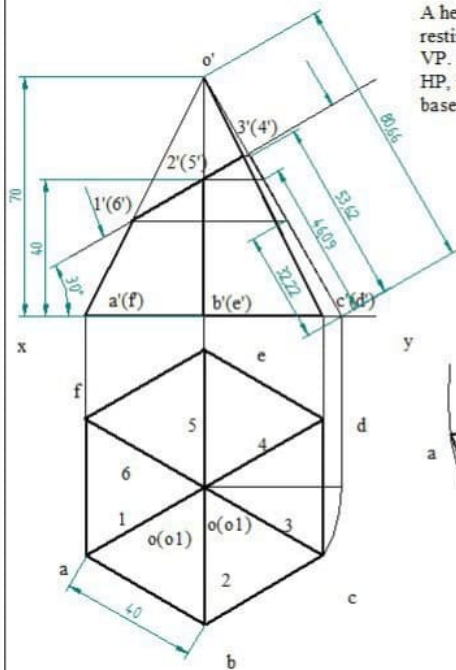


$$d=50 \quad r=25 \quad R=74.33, \quad te = 360 \cdot (r/R) = 360 \cdot (25/74.33) = 121.08$$

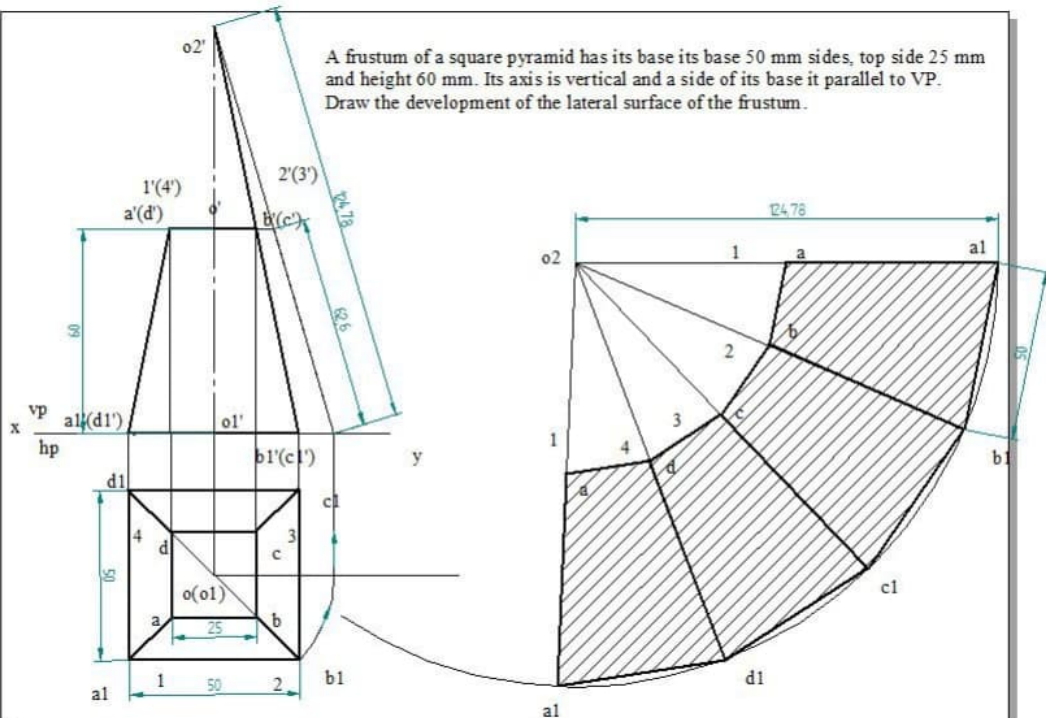
A vertical cylinder of base diameter 50 mm and axis length 70 mm is cut by a section plane perpendicular to VP, inclined at 50 degree to HP and passing through the mid point of the axis. Draw the development of the lateral surface of the cylinder.



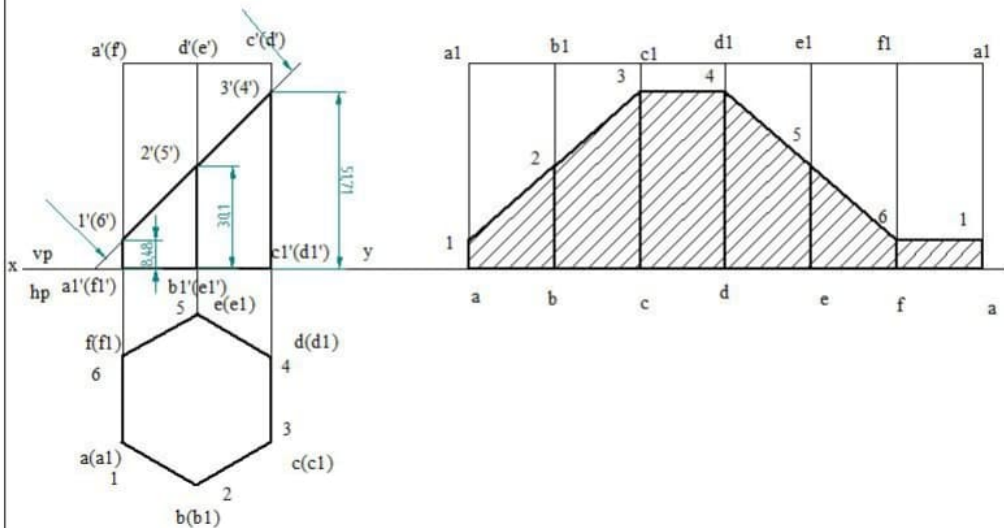
A hexagonal pyramid of base side 40 mm and altitude 70 mm is resting on HP on its base with two of the base edges perpendicular to VP. The pyramid is cut by a section plane inclined at 30 degree to HP, perpendicular to VP and intersecting the axis at 40 mm above the base. Draw the development of the remaining portion of the pyramid.



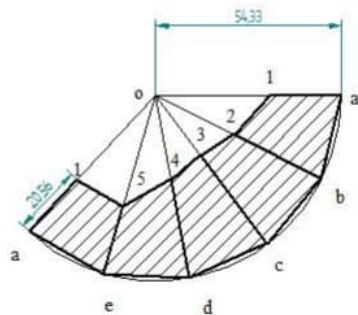
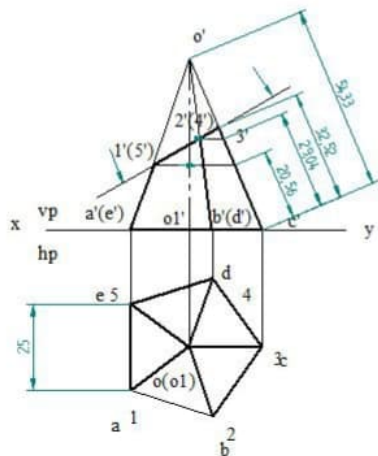
A frustum of a square pyramid has its base 50 mm sides, top side 25 mm and height 60 mm. Its axis is vertical and a side of its base is parallel to VP. Draw the development of the lateral surface of the frustum.



A hexagonal prism of base side 25 mm and axis length 60 mm is resting on HP on its base with two of its vertical faces perpendicular to VP. It is cut by a section plane inclined at 45 degrees to HP and perpendicular to VP and bisecting the axis. Draw the development of the lower portion of the prism.



A pentagonal pyramid of base side 25 mm and altitude 50 mm is resting on HP on its base with an edge of the base perpendicular to VP. The pyramid is cut by a section plane inclined at 30 degree to HP, perpendicular to VP and bisecting the axis. Draw the development of the lower portion of the pyramid.



A square prism of base side 30 mm and axis length 50 mm is resting on HP on its base with two of its vertical faces perpendicular to VP. It is cut by a section plane inclined at 40 degrees to HP and perpendicular to VP and passing at a distance of 30 mm from the base along the axis. Draw the development of the lower portion of the prism.

