Draw an ellipse in AutoCAD with Eccentricity 2/3. Focus distance 100 mm from its Directrix.

Set the Limits at 420,297 and Zoom-All.

Make ORTHO and OSNAP on.

First draw Directrix.

Then Focus at 100 mm.

Divide the Focus distance in 5 equal parts. Identify the points using DDPTYPE command. For 5 division 4 points will appear. Identify end point with Point command.

Identify O, V and F (Principal Axis intersection with Directrix, Vertex and Focus). Draw vertical line through V.

Draw a Circle with V as center and VF as radius. This intersects the vertical line through V at X.

Join OX.

Extend OX with RAY command.

Extend OF with Line command

Use Offset (20mm) command and draw parallel lines at 20 mm apart.

Identify the points at the intersection of the offset lines and principal axis as 1,2,3….

With point 1 as center make a circle with radius equal to the base of the similar triangle. Move the circle where its center is moved to Focus and the circle is shifted and the perimeter cuts the base line at P1.

The next circle will have the Focus (F) as the center and P2 lies on OX extension line.

Next circle will have center at 3 and radius equal to the base of the similar triangle. Then move the circle where its center is moved to Focus and the circle is shifted and the perimeter cuts the base line at P3.

Repeat the process until the curve appears to flatten and comes down.

Use Spline command to join the points.

Use Mirror command to make the curve touch the other side Principal Axis. With another Mirror command create the mirror image of the top half of the ellipse and create the ellipse.