· EXERCISE 3 ENGINEERING CURVES

1. A circle, of 50 mm diameter, rolls along the circumference of another circle of 150 mm diameter from inside. Draw path P on the circumference of rolling circle for 1 complete revolution. Name the curve & draw normal & tangent to curve at any point on it.

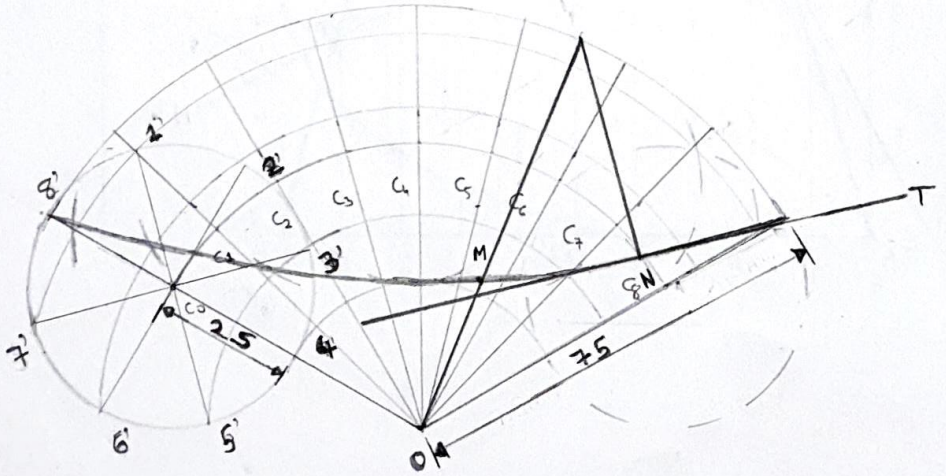
$d = 50mm$

$D = 150mm$

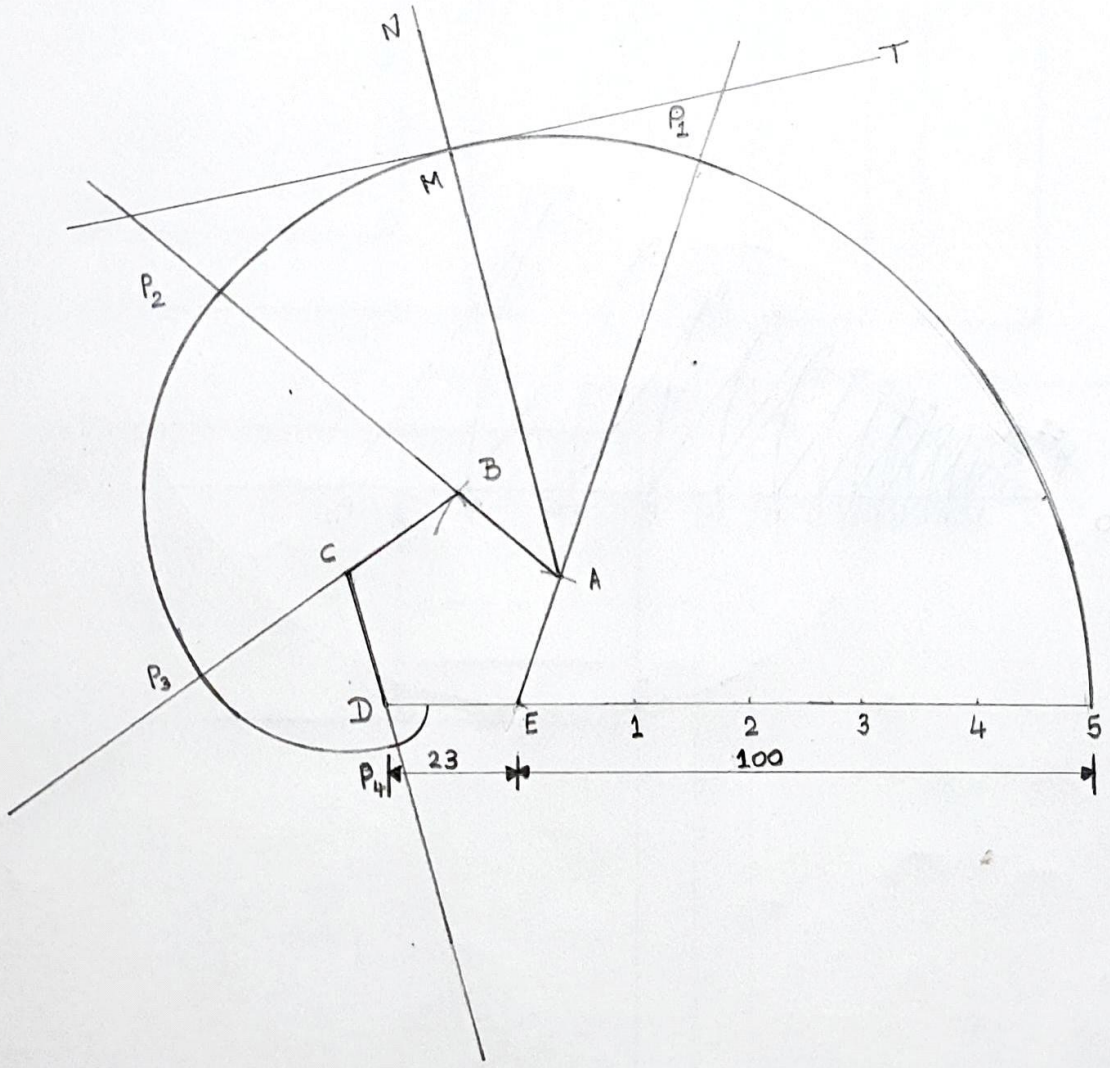
$\theta = 360 \times \frac{d}{D}$

$= \frac{360 \times 50}{150}$

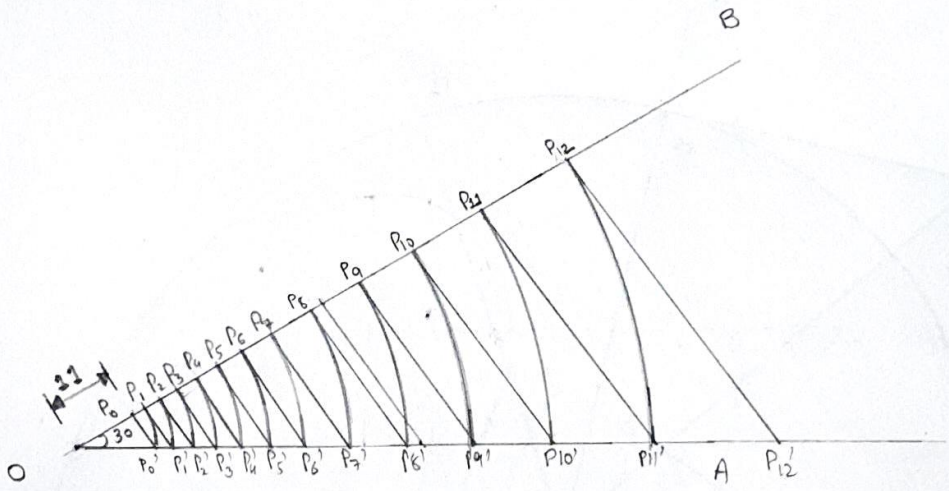
$= 120$

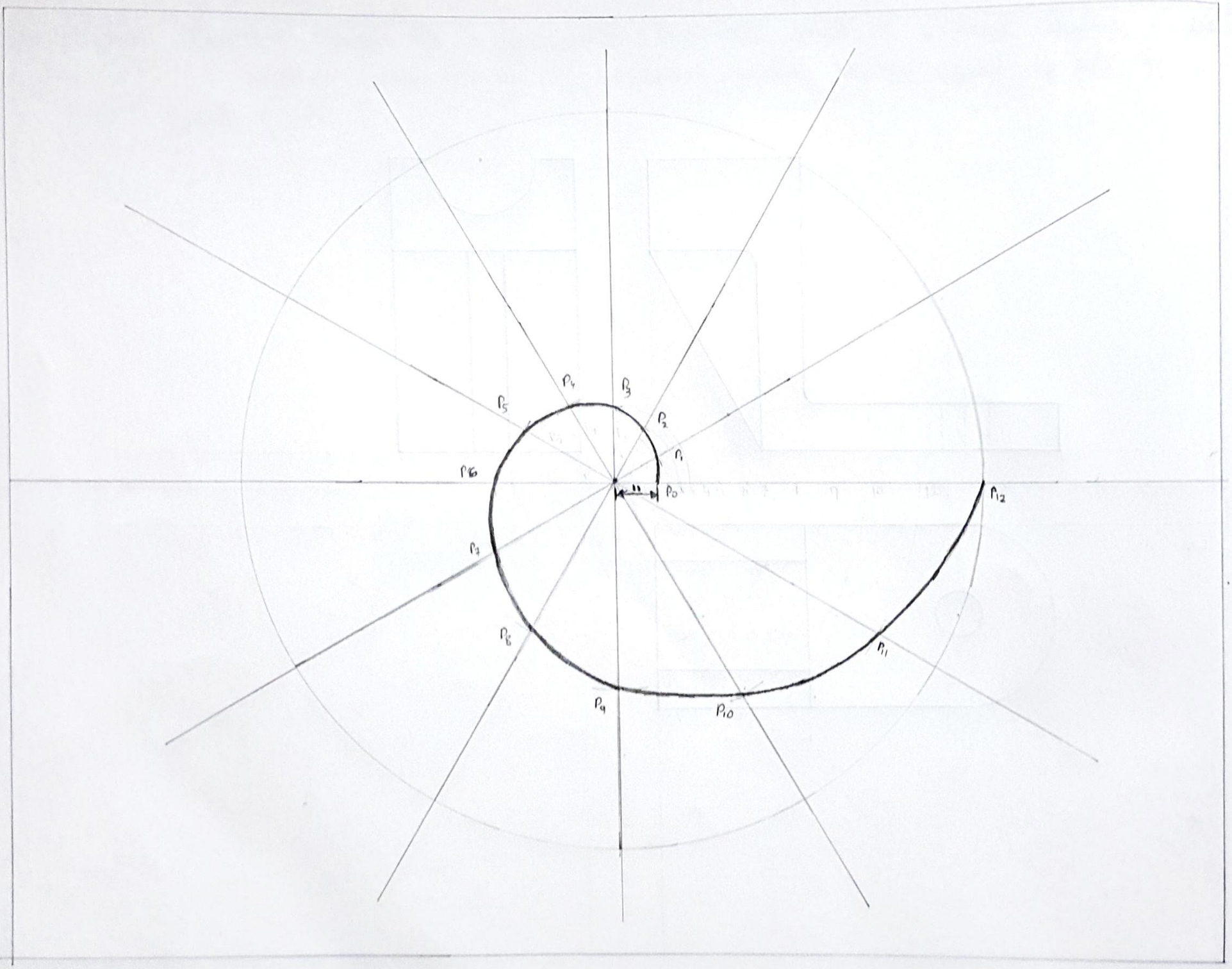


2. An inelastic string of length 100 mm is wound around a pentagon of 23mm sides. Draw the path trace by end of the string. Also draw the normal & tangent at any point on the curve.



3. Construct Logarithmic Spiral for 1 convolution. Given the length of shortest radius vector to 11 mm & ratio of the lengths of successive radius vectors equal to 6/5 for vectorial angle of 30°.

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