Arc Length

$$\frac{L}{2\pi R} = \frac{\Delta}{360°}$$

Note: no triangle

$circumference = 2\pi R$
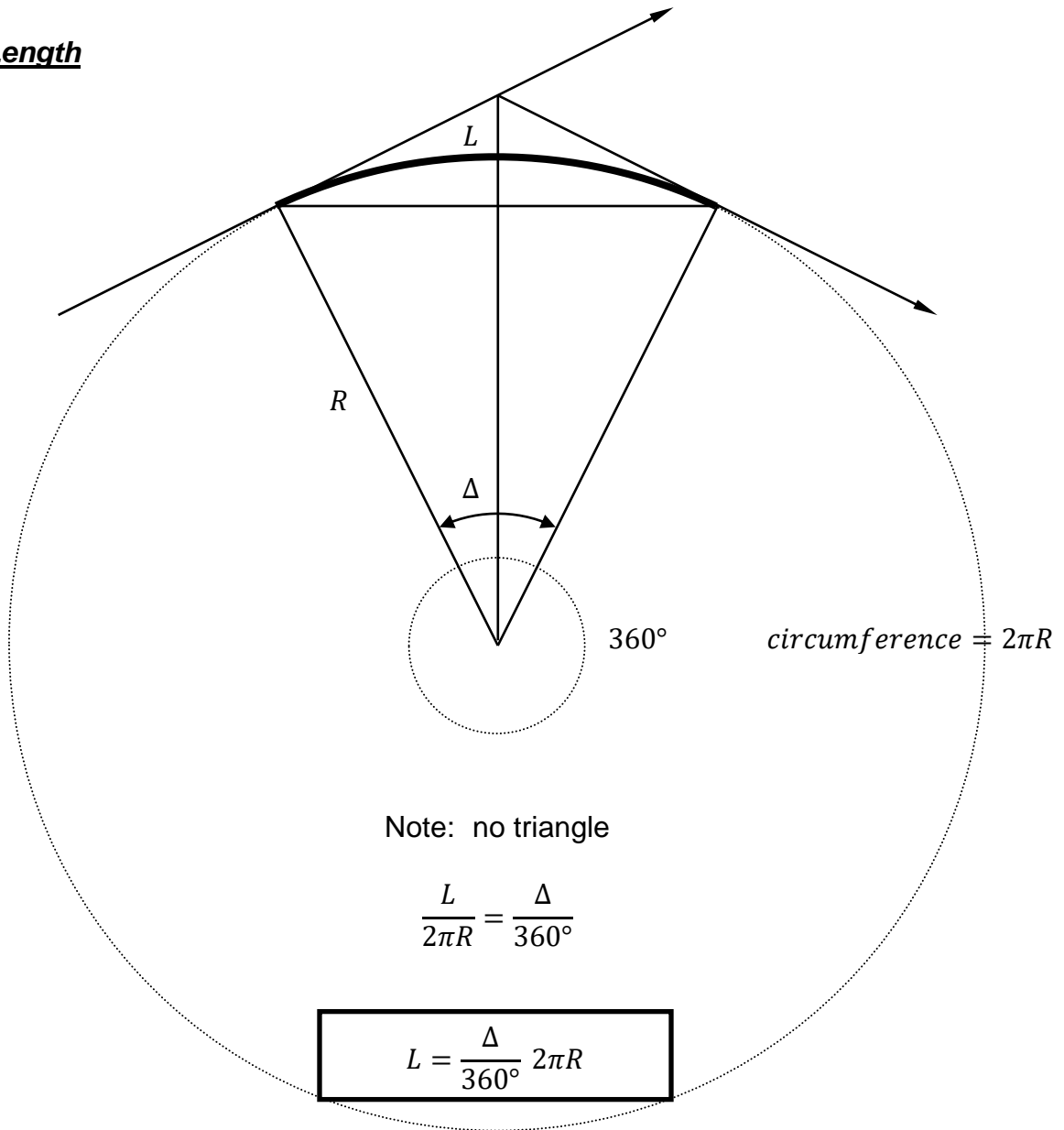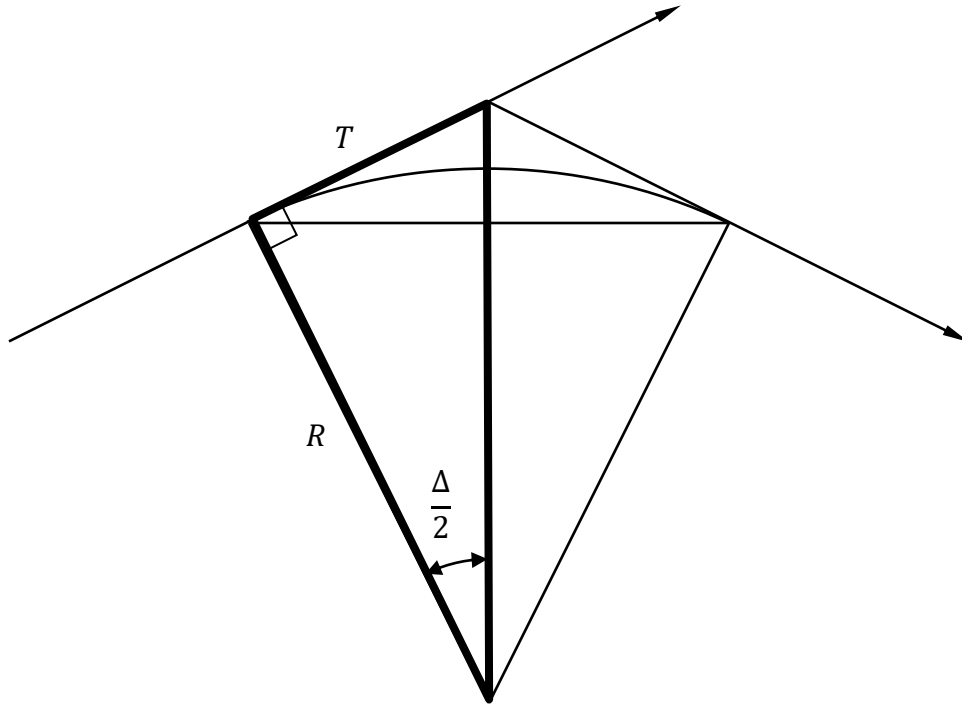
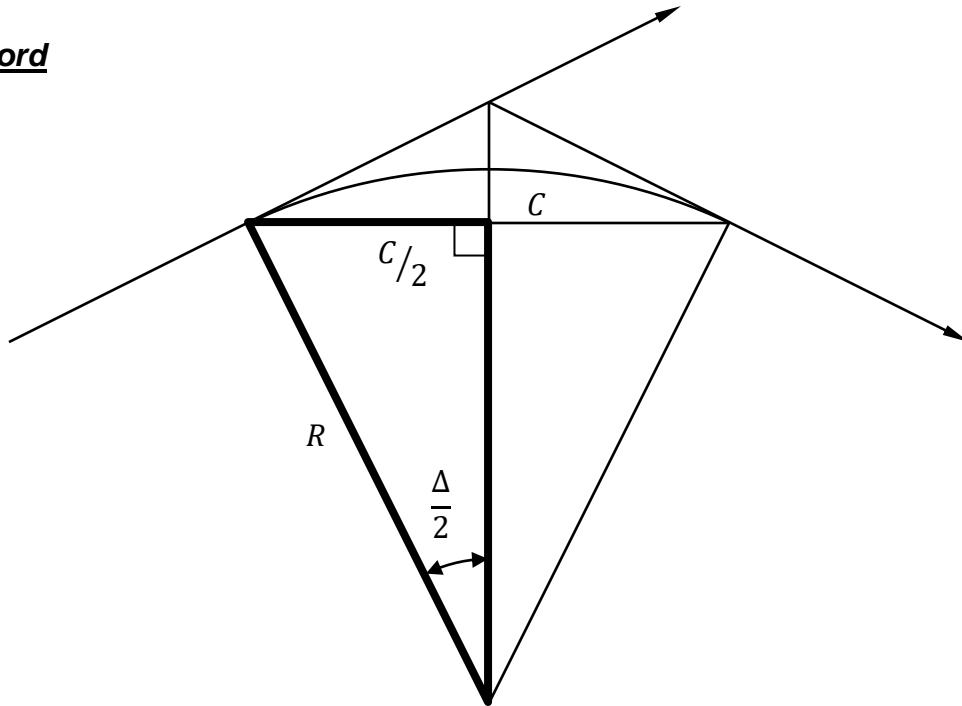360°

$$\boxed{L = \frac{\Delta}{360°}\, 2\pi R}$$

Tangent

$$tan\ \theta\ =\ \frac{O}{A}$$

$$tan\left(\frac{\Delta}{2}\right)\ =\ \frac{T}{R}$$

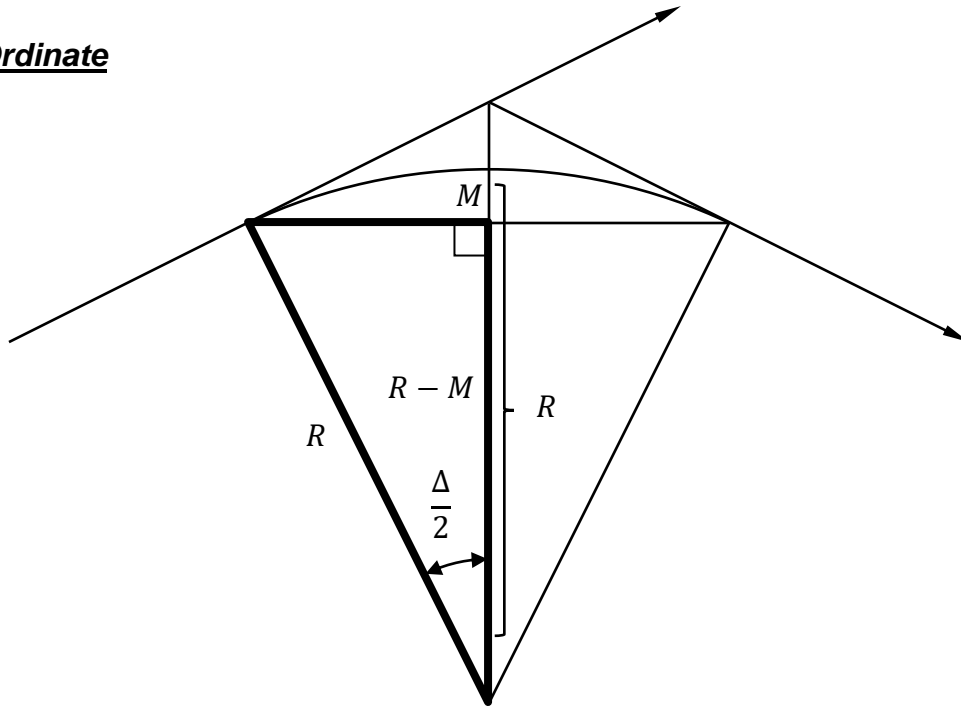$$T\ =\ R \cdot tan\left(\frac{\Delta}{2}\right)$$

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Long Chord

$$sin\ \theta\ =\ \frac{O}{H}$$

$$sin\left(\frac{\Delta}{2}\right)\ =\ \frac{C/_2}{R}$$

$$\frac{C}{2} =\ R \cdot sin\left(\frac{\Delta}{2}\right)$$

$$\boxed{C\ =\ 2 \cdot R \cdot sin\left(\frac{\Delta}{2}\right)}$$

Middle Ordinate
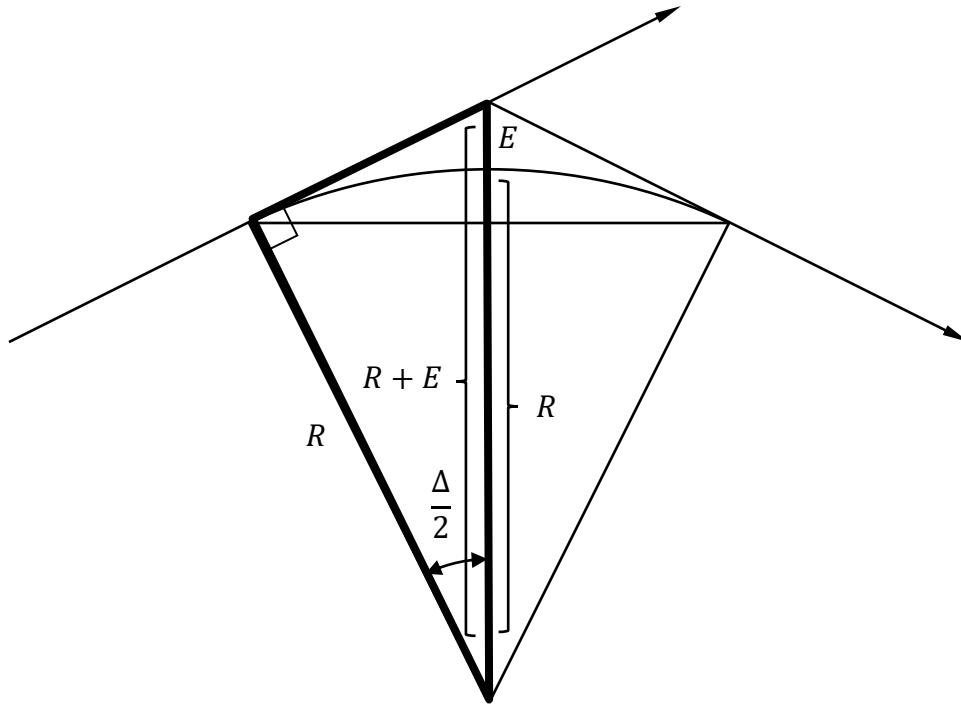

$$cos\ \theta\ =\ \frac{A}{H}$$

$$cos\left(\frac{\Delta}{2}\right)\ =\ \frac{R-M}{R}$$

$$R \cdot cos\left(\frac{\Delta}{2}\right) =\ R - M$$

$$M = R - R \cdot cos\left(\frac{\Delta}{2}\right)$$

$$\boxed{M = R \cdot \left(1 - cos\left(\frac{\Delta}{2}\right)\right)}$$

External

$$cos\ \theta\ =\ \frac{A}{H}$$

$$cos\left(\frac{\Delta}{2}\right)\ =\ \frac{R}{R+E}$$

$$R+E\ =\ \frac{R}{cos\left(\frac{\Delta}{2}\right)}$$

$$E\ =\ \frac{R}{cos\left(\frac{\Delta}{2}\right)}-R$$

$$E\ =\ R\cdot\left(\frac{1}{cos\left(\frac{\Delta}{2}\right)}-1\right)$$