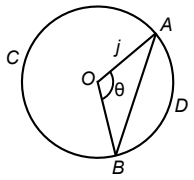
Cara mencari rumus panjang perentas, luas sektor dan luas tembereng.
Steps to find the formula of length of chord, the area of sector and the area of segment.

1. (a) Rajah menunjukkan sebuah sektor bulatan dengan pusat *O* dan jejari *j* unit, mencangkum sudut θ di pusat.
The diagram shows a sector of a circle with centre O and radius j units, subtends an angle of θ at the centre.



Hubungkait nisbah yang berikut:
Relate the following ratios:

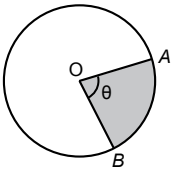
$$\frac{\theta^\circ}{360^\circ} = \frac{\theta \text{ rad}}{2\pi \text{ rad}} = \frac{\text{panjang lengkok } AB \text{ / } \textit{arc length AB}}{2\pi j}$$

(b) Selepas diringkas, panjang lengkok $s = j\theta$, dengan θ dalam radian.
After simplified, the arc length, $s = j\theta$, where, θ in radians.

(c) Panjang lengkok major *ACB* adalah lebih panjang daripada panjang lengkok minor *ADB*.
The major arc length ACB is longer than the minor arc length ADB.

(d) Untuk mencari perentas AB, kita menggunakan petua kosinus, iaitu $AB = \sqrt{j^2 + j^2 - 2j^2 \text{ kos } \theta}$
To find the chord AB, we use cosine rule, that is $AB = \sqrt{j^2 + j^2 - 2j^2 \cos \theta}$
dengan θ dalam darjah atau menggunakan petua sinus, iaitu $\frac{AB}{\sin\theta} = \frac{j}{\sin\left(90 - \frac{\theta}{2}\right)}$.
where θ is in degrees or using sine rule, that is $\frac{AB}{\sin\theta} = \frac{j}{\sin\left(90 - \frac{\theta}{2}\right)}$.

2. Dalam Rajah di bawah, didapati bahawa luas sektor *AOB* adalah berkadaran dengan saiz sudut, θ radian, yang tercangkum di pusat.
In the Diagram below, it is found that the area of the sector AOB of a circle is proportional to the size of the angle θ, in radian, which is subtended at the centre.



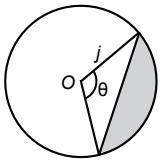
Maka, luas sektor / *Hence, the area of a sector*

$$= \frac{\theta}{2\pi} \times \pi j^2$$
$$= \frac{\theta}{2} j^2$$

3. Hubungan secara am antara sudut, panjang lengkok dan luas sektor adalah seperti berikut:
The general relation between the angle, arc length and the area of sector as follows:

$$\frac{\theta^\circ}{360^\circ} = \frac{\theta \text{ rad}}{2\pi \text{ rad}} = \frac{\text{panjang lengkok, s / } \textit{arc length, s}}{2\pi j} = \frac{\text{luas sektor } AB \textit{/ area of sector AB}}{\pi j^2 \text{ (luas bulatan / } \textit{area of circle}\text{)}}$$

4.



Luas tembereng / *Area of segment*
= luas sektor – luas segi tiga
area of sector – area of triangle
$= \frac{\theta}{2}j^2 - \frac{1}{2}j^2 \sin \theta°$