TRIGONOMETRY 2 - CIRCULAR MEASURE
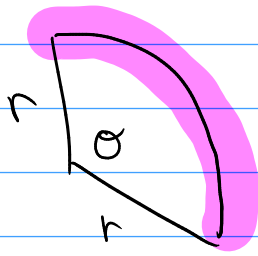
Including the following:

ARC LENGTH

r θ r

arc length $\quad S = r\theta$

→ radius

↳ angle between radii in radians

AREA OF A SECTOR

r θ A r
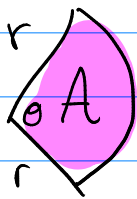
$360 = 2\pi$

Area $= \frac{1}{2}r^2\theta$ → angle between radii

$\therefore 360 \times \dfrac{\pi}{180}$

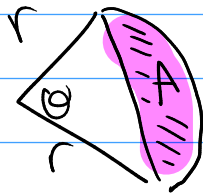$\therefore \theta° \times \dfrac{\pi}{180}$

↳ radius

CONVERT TO DEGREES

$2\pi = 360$

$\therefore 2\pi \times \dfrac{180}{\pi}$

$\therefore \theta_r \times \dfrac{180}{\pi}$

AREA OF A SEGMENT

Area of segment = Area of sector − Area of triangle

$$= \frac{1}{2}r^2\theta - \frac{1}{2}r^2\sin\theta$$

$$= \frac{1}{2}r^2(\theta - \sin\theta)$$

↳ cosine rule