

TRIGONOMETRY 2 - CIRCULAR MEASURE

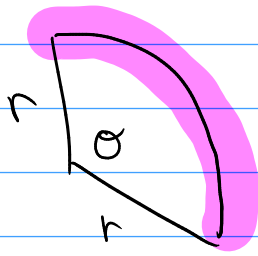
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ARC LENGTH

2



arc length

$$S = r\theta$$

radius

angle between
radii in radians

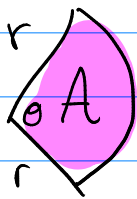
AREA OF A SECTOR

CONVERT TO RADIANS

$$360 = 2\pi$$

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

$$\therefore \theta^\circ \times \frac{\pi}{180}$$



$$\text{Area} = \frac{1}{2} r^2 \theta$$

angle between
radii

radius

CONVERT TO DEGREES

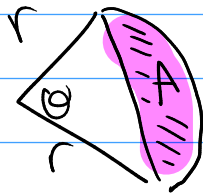
$$2\pi = 360$$

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

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

AREA OF A SEGMENT

3



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