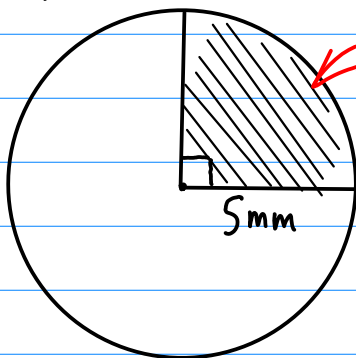


8.6: Area of Sectors & Rings

• Sector:



the shaded region is a sector

$$* A_{\text{SECTOR}} = \frac{n}{360^\circ} \cdot \pi r^2$$

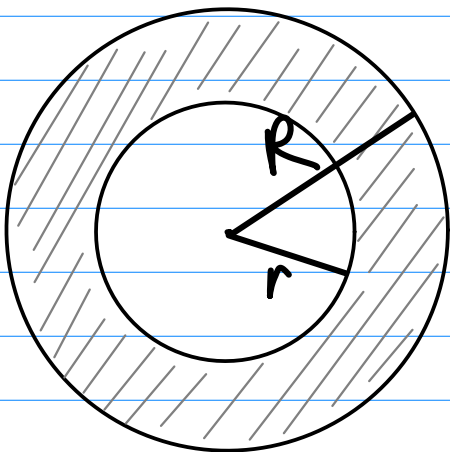
Ex:

$$A_{\text{SECTOR}} = \frac{90^\circ}{360^\circ} \cdot \pi (5\text{mm})^2$$

$$= \frac{1}{4} \cdot 25\pi \text{mm}^2$$

$$= \frac{25}{4} \pi \text{mm}^2$$

• Ring (Annulus): region btwn 2 concentric circles



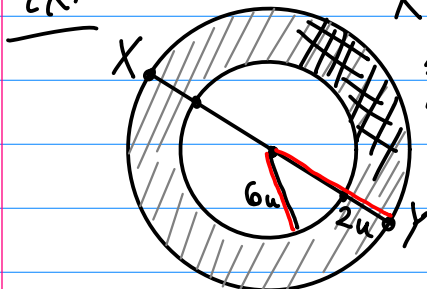
$$A_{\text{RING}} = A_{\text{LGO}} - A_{\text{SMO}}$$

$$= \pi(R)^2 - \pi(r)^2$$

$$= \pi R^2 - \pi r^2$$

$$A_{\text{RING}} = \pi(R^2 - r^2)$$

Ex:



$$XY = 16u$$

find the area of the shaded region.

$$A_{\text{RING}} = \pi(R^2 - r^2)$$

$$= \pi(8^2 - 6^2)$$

$$= \pi(64 - 36)$$

$$= \pi(28)$$

$$= 28\pi u^2$$