

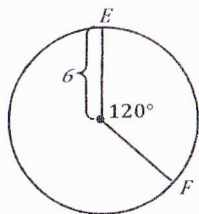
11.3 - ARC LENGTH & AREA OF SECTORS

ARC LENGTH: a piece of the circumference of a circle

$$\text{ARC LENGTH} = \frac{x^\circ}{360^\circ} \cdot 2\pi r$$

x = measure of \angle
 r = radius

EXAMPLE 1: Find the length of \widehat{EF} below.



$$\frac{120}{360} \cdot 2\pi(6) = 4\pi$$

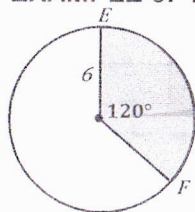
$$\widehat{EF} = 4\pi$$

SECTOR: a slice of a circle bounded by 2 radii and an arc

$$\text{SECTOR AREA} = \frac{x^\circ}{360^\circ} \cdot \pi r^2$$

x = measure of \angle
 r = radius

EXAMPLE 3: Find the area of the sector below.



$$\frac{120}{360} \cdot \pi(6)^2 = 12\pi$$

$$\text{Sector Area} = 12\pi$$