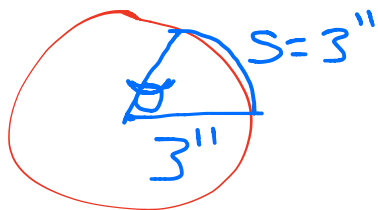


RADIAN = $\frac{\text{Subtended Arc}}{\text{Radius}}$

θ theta

$$\theta = \frac{s}{r}$$

ex.

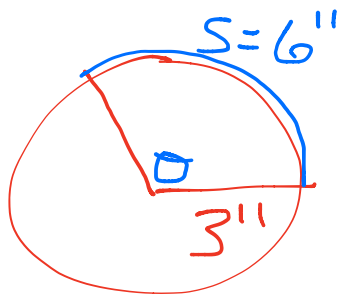


$$\theta = \frac{s}{r}$$

$$\theta = \frac{3}{3}$$

$$\theta = 1 \text{ radian}$$

ex.



$$\theta = \frac{6}{3}$$

$$\theta = 2 \text{ radians}$$

$$r \cdot \theta = \frac{s}{r}$$

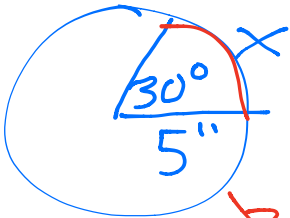
...

~~XXXXX~~

$$\text{ARC LENGTH} = \theta \cdot r$$

"S"

↑ angle in Radians
↑ Radius



$$\frac{1 \cancel{30}^\circ}{12 \cancel{360}^\circ} = \frac{x}{10\pi}$$

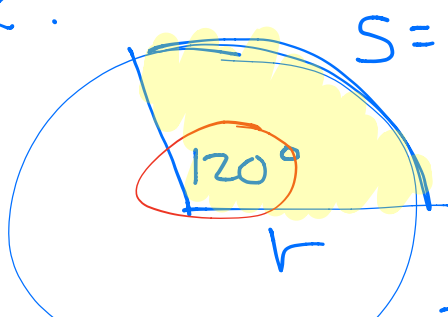
$$\frac{1}{12} = \frac{x}{10\pi}$$

$$\frac{12x}{12} = \frac{10\pi}{12}$$

$$x = 2.62 \text{ in} \quad \frac{5\pi}{6} \text{ in.}$$

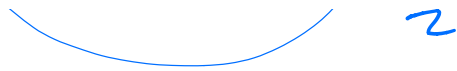
$$\begin{aligned} S &= \theta \cdot r \\ &= \frac{\pi}{6} \cdot 5 \\ &= \frac{5\pi}{6} \text{ in.} \end{aligned}$$

ex.



$$S = 10.2 \text{ in.}$$

$$\begin{aligned} S &= \theta \cdot r \\ \frac{3}{5} \cdot 10.2 &= \frac{3\pi}{5} \cdot r \end{aligned}$$



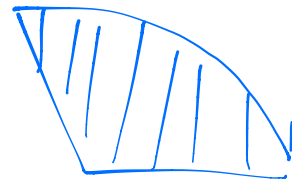
$$15.3 = \frac{\pi \cdot r}{\pi}$$

$$4.87... = r$$

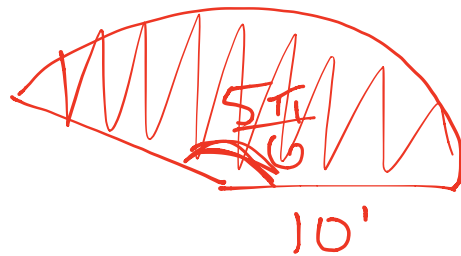
AREA OF A SECTOR:

$$A = \frac{1}{2} \theta r^2$$

$$\frac{\theta}{360^\circ} \cdot \pi r^2$$



$$= \frac{\theta}{2\pi} \cdot \pi r^2$$



$$= \frac{\theta}{2} \cdot r^2$$

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

$$\frac{1}{2} \cdot \frac{5\pi}{6} \cdot \frac{100}{1}$$

$$\frac{1}{2} \left(\frac{5\pi}{6} \right) (10)^2$$

$$\frac{125\pi}{3} \text{ in.}^2$$
