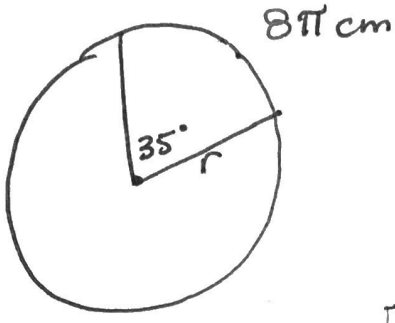
$$A_L = \frac{2\pi r \theta}{360}$$

1. Find the radius



$360 \cdot 8\pi = \frac{2\pi \boxed{r} (35) \cdot 360}{360}$

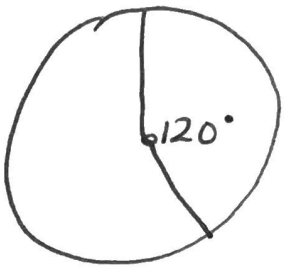
$2880\pi = 2\pi \boxed{r} (35)$

$\frac{2880\pi}{\pi} = \frac{70\pi \boxed{r}}{\pi}$

$\frac{2880}{70} = \frac{70\boxed{r}}{70}$

$\boxed{41.1 \text{ cm}}$

2. Find the diameter
2 x radius



$360 \cdot 10 = \frac{2\pi \boxed{r} (120) \cdot 360}{360}$

$3600 = 2\pi \boxed{r} (120)$

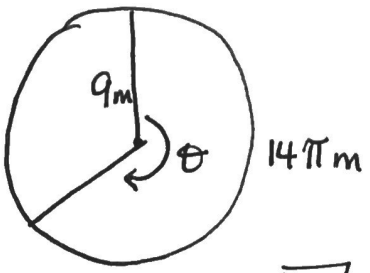
$\frac{3600}{240} = \frac{240\pi \boxed{r}}{240}$

$\frac{15}{\pi} = \frac{\pi \boxed{r}}{\pi}$

$4.8 = r$

$2(4.8) = \boxed{9.6 = d}$ in

3. Find the Central Angle



$360 \cdot 14\pi = \frac{2\pi (9) \boxed{\theta} \cdot 360}{360}$

$\frac{5040\pi}{\pi} = \frac{18\pi \boxed{\theta}}{\pi}$

$\frac{5040}{18} = \frac{18(\theta)}{18}$

$\boxed{280^\circ = \theta}$