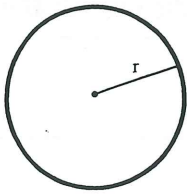
Warm-Up

1. **Find the circumference of a circle with a diameter of 10ft. Round your answer to the nearest tenth.**
2. **Find the circumference of ⊙A if the radius is 2.5. Round your answer to the nearest hundredth.**
3. **Find the radius of a circle with a circumference of 56.5 m.**

Area

The amount of space occupied.



$$A = \pi r^2$$

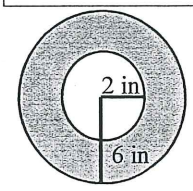
Find the area.

Example 1

If ⊙S has a circumference of 10π inches, find the area of the circle to the nearest hundredth.

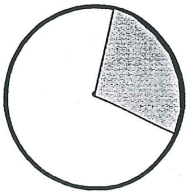
Example 2

Find the area of the shaded region.



Sector

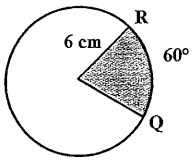
the region bounded by two radii of the circle and their intercepted arc.



Area of a Sector

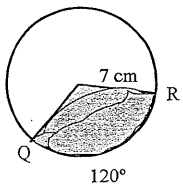
$$\frac{\text{measure of arc}}{360^\circ} = \frac{\text{area of sector}}{\pi r^2}$$

Example 3 Find the area of the sector.



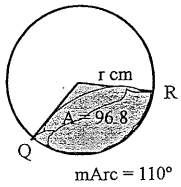
$$\frac{m\widehat{RQ}}{360^\circ} = \frac{\text{area of sector}}{\pi r^2}$$

Example 4 Find the area of the sector.



$$\frac{m\widehat{RQ}}{360^\circ} = \frac{\text{area of sector}}{\pi r^2}$$

Example 5 Find the radius if the area of the sector is 96.8.



$$\frac{m\widehat{RQ}}{360^\circ} = \frac{\text{area of sector}}{\pi r^2}$$