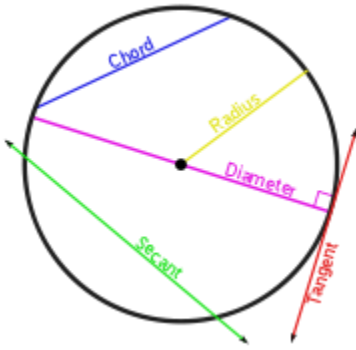


Properties of Circles



- The length of an arc, a , given central angle θ and radius r , is given by: $a = \frac{\theta}{360^\circ}(2\pi r)$
- Given central angle θ and radius r , the area of a sector, A , is $A = \frac{\theta}{360^\circ}(\pi r^2)$
- The area of a segment, given central angle θ and radius r , is given by:

$$A = \frac{1}{2}r^2 \left(\frac{\pi}{180^\circ}\theta - \sin\theta \right)$$

Example 1 Determine the length of an arc with central angle 50° and radius 6 cm.

Example 2 Determine the area of the sector associated with the arc in Example 1.

Example 3 A segment has central angle 65° and area 12.5 cm^2 . What is the radius of the circle?