DATE: _____

8.3 Angles and Their Measures

Review of Prior Concepts

The wheels on the bus go round and round, round and round, round and round.
The wheels on the bus go round and round, all through the town.
If the radius of the wheel of the bus is 70 cm, what is the circumference of the wheel?

Vocabulary

- Degree -

  Degree of ⊙ = _____

- Radian -

$$\text{Radian of } \odot = \frac{\text{Length of } \odot}{\text{Lenth of radius of } \odot} = \frac{\qquad}{\qquad} =$$

Convert from Degrees to Radians

Multiply degrees by

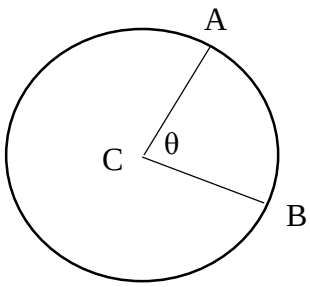
Example: Convert 36° to radians

Convert from Radians to Degrees

Multiply radians by

Example: Convert $\frac{2\pi}{3}$ radians to degrees

Arc Length



$\widehat{AB}$ = ——————— ( )

= ——— ( )

=

= where θ is measured in degrees

*What if θ is measured in radians?

S =

S = where θ is measured in radians

Examples:

Given: S = 2.5 cm and θ = π/3 rad Find: r	Given: r = 5 ft and θ = 18º Find: s
A central angle θ intercepts arcs S_1 and S_2 on two concentric circles with radii r_1 and r_2 respectively. Given: r_1 = 8 km, S_1 = 36 km, and S_2 = 72 km Find: θ and r_2	A 100-degree arc of a circle has a length of 7 cm. To the nearest centimeter, what is the radius of the circle?