

Unit 17 Fact Sheet

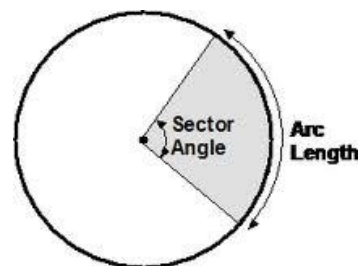
Topic #1: Circle Basics

Term	Definition
Circle	A set of points that are a fixed distance from a given point, the center.
Chord	A line segment with its endpoints on the circle.
Secant	A line that intersects a circle at two points and extends into the exterior of the circle.
Tangent	A line that intersects a circle at one point.
Central Angle	An angle whose vertex is at the center.
Arc	A part of the circumference of a circle. Its measure is equal to the measure of the central angle.
Semicircle	An arc with a measure of 180° . Named with three letters.
Minor Arc	An arc whose measure is $< 180^\circ$. Named with two letters.
Major Arc	An arc whose measure is $> 180^\circ$. Named with three letters.

Topic #2: Arc Length and Sector Area

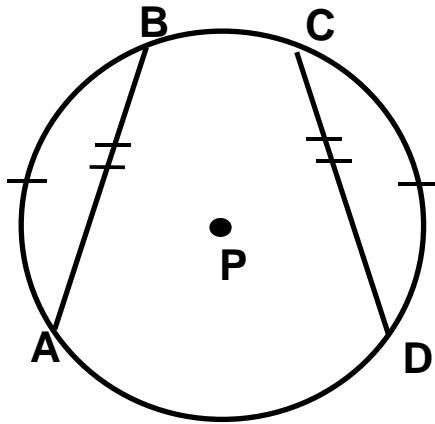
Arc Length $\frac{\text{arc length}}{\text{circumference}} = \frac{x^\circ}{360^\circ}$

Area of Sector $\frac{\text{sector area}}{\text{area of circle}} = \frac{x^\circ}{360^\circ}$



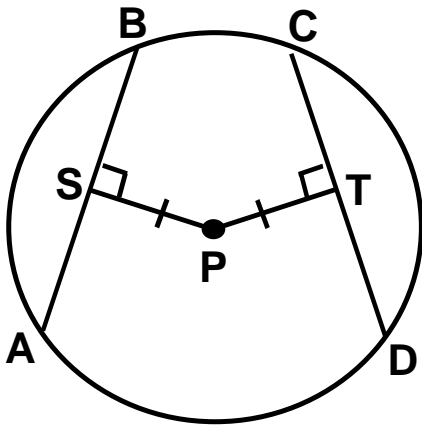
Topic #3: Arcs and Chords

In the same or congruent circles



Congruent arcs have congruent chords.

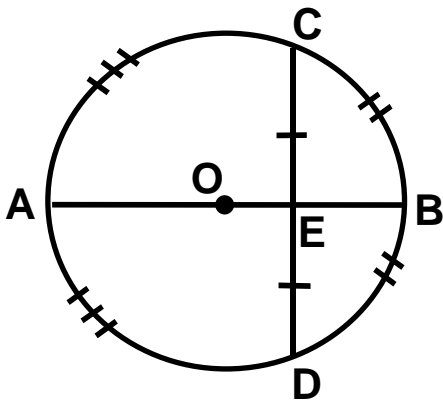
$$\text{If } \widehat{AB} \cong \widehat{CD}, \text{ then } \overline{AB} \cong \overline{CD}$$



Congruent chords are equidistant from the center.

$$\text{If } \overline{AB} \cong \overline{CD}, \text{ then } \overline{PS} \cong \overline{PT}$$

Diameter Perpendicular to a chord

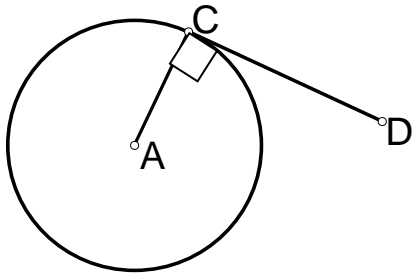


A diameter (or radius) that is perpendicular to a chord bisects the chord and its arcs.

$$\text{If } \overline{AB} \perp \overline{CD}, \text{ then } \overline{CE} \cong \overline{ED}, \widehat{CB} \cong \widehat{BD}, \text{ and } \widehat{CA} \cong \widehat{DA}$$

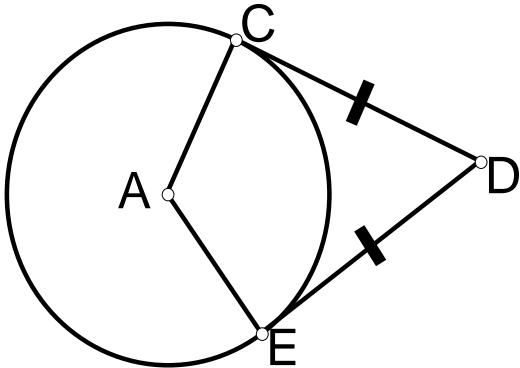
Topic #4: Tangents

Radius and Tangent Meet



If a line is tangent to a circle, then it is perpendicular to the radius drawn to the point of tangency.

Tangents drawn from a common point are \cong .



$$\overline{CD} \cong \overline{DE}$$