

Geometry

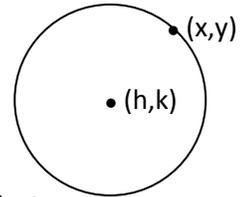
Name: _____ Section: _____ Date: _____

Unit 11 Graphic Organizer: Circles

Vocabulary:

- Radius, Diameter, Chord
- Sector
- Subtend / Intercept
- Secant vs Tangent
- Arc , Adjacent Arcs, Arc Addition
- Exterior, Inscribed, Interior, Central \sphericalangle
- Radian Measure

The **equation for a circle** with a center (h, k) is: _____



Circle Equation → Graph:

- _____
- _____
- _____
- _____

Given Diameter Endpoints → Equation or Graph

1. Calculate center using _____ formula
2. Calculate radius using _____ formula w/cntr & pt
3. Equation: Plug in center and radius
Graph: Plot center, count r to plot 4 pts, connect pts w/arcs

Remember to label your graph

\sphericalangle and arc relationships

	\sphericalangle Vertex is located:			
	Outside circle	On circle	Inside circle	Center of circle
Example				
\sphericalangle Name			Interior	
\sphericalangle rays are		Chords/secants/1 tangent sharing an endpoint		
Measurements relationship	$m\angle = \frac{1}{2}(m\text{large} - m\text{small})$ Angle measure = $\frac{1}{2}$ difference of arcs			

Segment Length Relationships

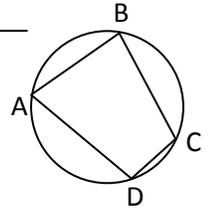
	Same External Point:			Same Internal Pt: Chord-Chord
	2 Tangents	Secant – Tangent	Secant - Secant	
Example				
Algebraic Equation	Tangent segment ₁ = Tangent segment ₂			
Derived from			Similar Triangles (AA~)	

Central Angle Proportions: Sector / Arc Length and Radian Measure

	<u>Sector Area</u>	<u>Arc Length</u>	<u>Radian Measure</u>
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Other Geometric Relationships in a Circle:

- In a \odot circle or 2 $\cong \odot$'s, \cong _____ \leftrightarrow \cong _____ \leftrightarrow \cong _____
 - In an inscribed quadrilateral in a \odot , opposite \sphericalangle 's are _____.
- Example: _____



Circle Proofs

<i>Arcs and Chords</i>	<ul style="list-style-type: none"> • \cong central angles have \cong chords 	
	<ul style="list-style-type: none"> • \cong chords have \cong arcs 	One \odot or 2 $\cong \odot$'s
	<ul style="list-style-type: none"> • \cong arcs have \cong central angles 	
	<ul style="list-style-type: none"> • If a radius (or diameter) is \perp to a chord \rightarrow it bisects the chord and the arc 	
<i>Radii and Tangents</i>	<ul style="list-style-type: none"> • In a circle all radii are \cong 	
	<ul style="list-style-type: none"> • A tangent is \perp to the radius at the point of tangency 	
	<ul style="list-style-type: none"> • 2 segs. tangent to circle from the same external point \rightarrow segs. \cong 	
<i>Inscribed Angles</i>	<ul style="list-style-type: none"> • If an \sphericalangle is inscribed in a semi circle \rightarrow it is a right \sphericalangle 	
	<ul style="list-style-type: none"> • If two inscribed \sphericalangle's intercept the same (or \cong) arcs \rightarrow the \sphericalangle's are \cong 	
	<ul style="list-style-type: none"> • If a quadrilateral is inscribed in a circle \rightarrow Opposite \sphericalangle's are supplementary 	