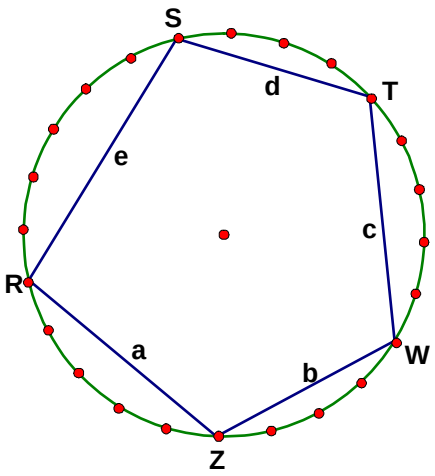
11.4 Properties of Chords
Pre-AP Geometry

Name _____
Period _____ Date _____

EXPLORE/EXPLAIN

1. a) What is the measure the arc between each pair of consecutive points?_____



b) Using a ruler to measure the chords, and the dots to find the measures of the arcs, complete the table.

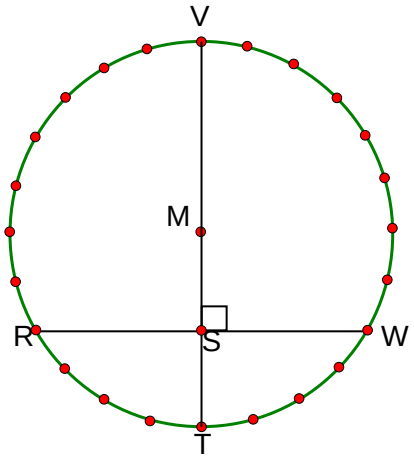
	measure of the chord		measure of the arc
a		$m\widehat{RZ}$	
b		$m\widehat{ZW}$	
c		$m\widehat{TW}$	
d		$m\widehat{ST}$	
e		$m\widehat{RS}$	

c) Make a conjecture based on your results:

If two chords are congruent, then

If two arcs are congruent, then

2. M is the center.



a) $\overline{RW}$ is a _____.

b) $\overline{VT}$ is a _____.

c) What relationship do $\overline{VT}$ and $\overline{RW}$ have? _____

d) Using a ruler and dots, find the measure of the following.

RS = _____, SW = _____, $m\widehat{RT}$ = _____,

$m\widehat{TW}$ = _____, $m\widehat{RV}$ = _____, $m\widehat{VW}$ = _____.

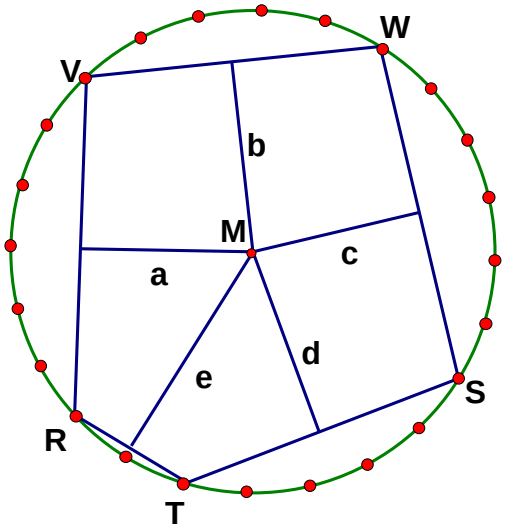
e) Make a conjecture based on your results:

If a diameter is perpendicular to a chord, then

3. M is the center of the circle.

a) Complete the chart.

	distance to the center		measure of the chord
a		**RV**	
b		**VW**	
c		**SW**	
d		**ST**	
e		**RT**	

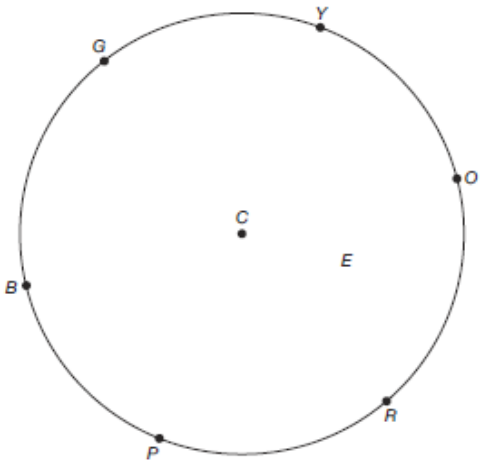


b) Make a conjecture based on your results:

If two chords are congruent, then

If two chords are equidistant from the center, then

4. Segments of a Chord – Use Circle C to the right.



a) Draw chords $\overline{GP}$ and $\overline{YB}$. Label the point of intersection E.

b) Draw chords $\overline{GY}$ and $\overline{BP}$ to complete the triangles.

c) What can you say about these two triangles?

d) If $m\overline{GE} = 8$, $m\overline{EP} = 12$, and $m\overline{EY} = 16$, how can we find $m\overline{BE}$?

e) Make a conjecture about how we can find the missing part of a chord:

If two chords in a circle intersect, then