C 10.02 – Chords I Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Use the diagrams to respond to the prompts that follow:

 A

 Q W C

 D

 R

 62° 18°

142° 157°

 *r = 11 cm* Circumference = 53.407 in

 B

 X

2. Write the set-up to find each chord.

RQ: AB:

WX: CD:

3. Find the measure of each chord above. Round to the nearest hundredth.

RQ: WX: AB: CD:

Visualize this:

4. Circle B has four chords that are identically-sized. The chords do not intersect each other; however, each chord shares its endpoints with two other chords. *(In other words, the endpoints of chord #2 touch chord #1 and chord #3.)*

1. Draw a diagram of this situation.
2. What shape would the chords make?
3. What would the central angle be that creates each chord?

5. What is the maximum central angle that would create eight congruent chords that do not intersect each other?

1. Draw a diagram of this situation.
2. What shape would the chords make?

6. Work Backwards I – There is a chord in a circle that is 17.2 units long. Its central angle is 88°.

 a) Sketch this situation. Your angle doesn’t have to be precise, but make

it respectable. (88° is really close to what angle that’s easy to draw?)

 b) Determine the radius of the circle.

7. There is a chord in a circle that is 10.4 units long. Its central angle is 50°.

a) Sketch this situation. Your angle doesn’t have to be precise,

but make it respectable. Then darken the minor arc on the

circumference that shares endpoints with this chord.

 b) Determine the length of the minor arc that shares endpoints with this chord.

 c) Draw the radii that create the boundaries for this arc. Then find the area of the sector you created.

8. Work Backwards II - There is a chord in a circle that is 8 units long. The radius of the circle is 10 units long.

 a) Determine the central angle that creates this chord. See below if you need a hint.[[1]](#footnote-1)

1. Hint: Inverse trig ratios to find an angle. [↑](#footnote-ref-1)