Geometry B Live Lesson Class

U7L2 – Chords and Arcs
(Ch. 12-2 in textbook)

CONNECTIONS ACADEMY®

Agenda

1. Review topics and problems from Unit 7, Lesson 2 – Chords and Arcs.

2. Use the 2-column note system to take better notes in math class. Bring your math notebook and pen or pencil to each math LiveLesson class.

2-Column Notes Template

1. Announcements/To Do's	1. Write down important details.
2. School-Wide Learner Outcomes	2. What are you going to work on this week?
3. LL Objectives	
4. Vocabulary words	4. Definitions (fill in as we go)
5. Problems	5. Steps to solving problems
6. Summary (End of class)	6. 1 or 2 sentences about the LL class.

Reminders and To – Do's

Information

1. Complete 1 math lesson per day.

2. Check your WebMail every day

3. Be prepared to spend 4 - 6 hours per day on schoolwork.

4. Remind your Learning Coach to take daily attendance

What to do

1. Go to your Planner in Connexus to find the math lesson for the day

2. Go to Connexus to find WebMail

3. Complete lessons for the day from your Planner. Do not get behind on lessons.

4. Have your Learning Coach log into Connexus daily.

Reminders and To – Do's

Information	What to do
5. Go to the Message Board first for information about our math class.	
6. Contact Mr. Elizondo for math questions.	6. Call (559) 549 - 3244 and leave a voicemail if call is not answered.
Remember: You need at least 2 phone calls with Mr. Elizondo per semester.	Make an appointment at: https://elizondo.youcanbook.me
	Send a WebMail

U7L2 – California Common Core State Standards

- HSG-C.A.2: Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.

U7L2 – Objectives

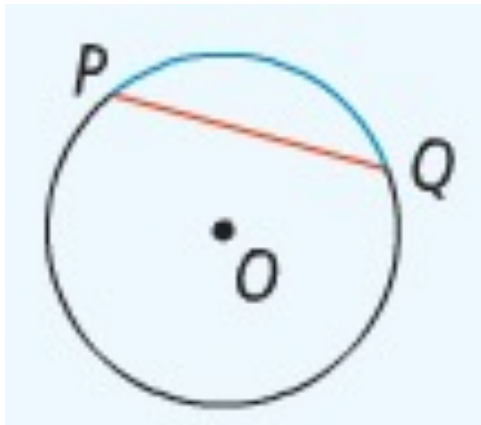- Use congruent chords, arc, and central angles

- Use perpendicular bisector to chords

U7L2 – Vocabulary

- chord

Chord: a segment whose endpoints are _____on a circle_____.

The diagram shows the chord $\overline{PQ}$ and its related arc $\overset{\frown}{PQ}$.
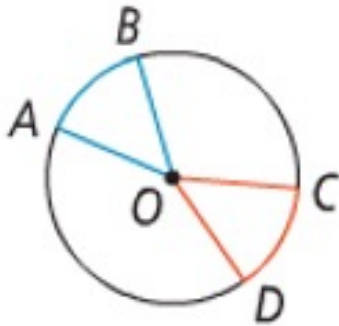
Theorem 12-4 and its Converse

If $\angle AOB \cong \angle COD$, then $\overset{\frown}{AB} \cong \overset{\frown}{CD}$.

If $\overset{\frown}{AB} \cong \overset{\frown}{CD}$, then $\angle AOB \cong \angle COD$.
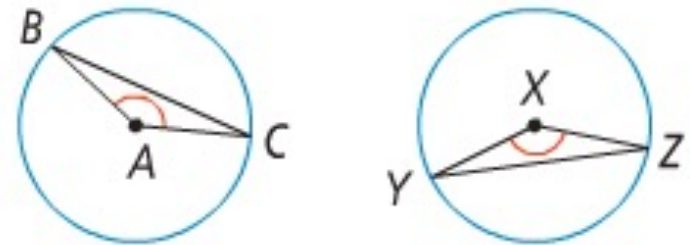
Theorem 12-5 and its Converse
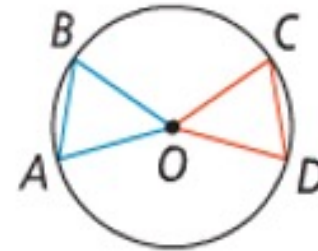
If $\angle AOB \cong \angle COD$, then $\overline{AB} \cong \overline{CD}$.

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U7L2 – Chords and Arcs

Theorem 12-4 and its Converse
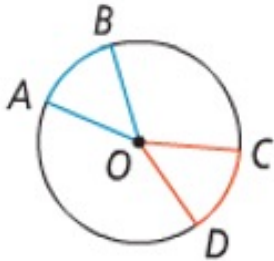
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Theorem 12-5 and its Converse
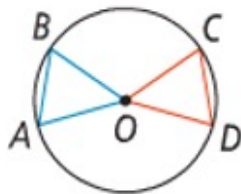
If $\angle AOB \cong \angle COD$, then $\overline{AB} \cong \overline{CD}$.

If $\overline{AB} \cong \overline{CD}$, then $\angle AOB \cong \angle COD$.
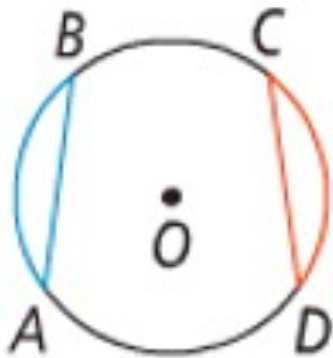
The circles are congruent. What can you conclude?

$\overset{\frown}{BC} \cong \overset{\frown}{YZ}$, *because within congruent circles, congruent chords have congruent arcs.*
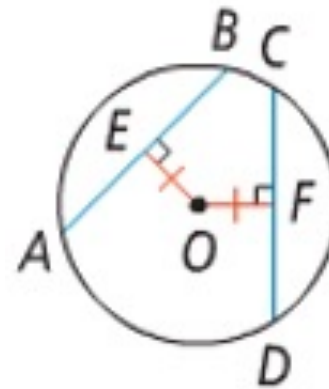
$\overline{BC} \cong \overline{YZ}$

Theorem 12-6 and Its Converse

If $\overline{AB} \cong \overline{CD}$, then $\overset{\frown}{AB} \cong \overset{\frown}{CD}$.

If $\overset{\frown}{AB} \cong \overset{\frown}{CD}$, then $\overline{AB} \cong \overline{CD}$.
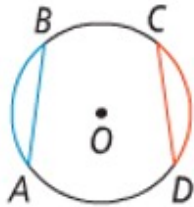
Theorem 12-7 and Its Converse

If $OE = OF$, then $\overline{AB} \cong \overline{CD}$.

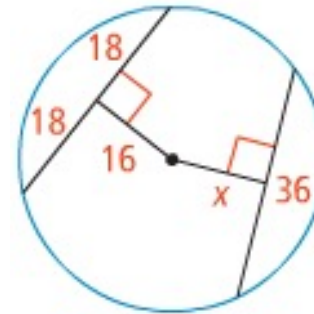If $\overline{AB} \cong \overline{CD}$, then $OE = OF$.

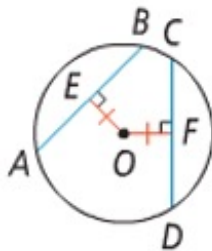# U7L2 – Chords and Arcs

Theorem 12-6 and Its Converse

If $\overline{AB} \cong \overline{CD}$, then $\overarc{AB} \cong \overarc{CD}$.

If $\overarc{AB} \cong \overarc{CD}$, then $\overline{AB} \cong \overline{CD}$.

Theorem 12-7 and Its Converse

If $OE = OF$, then $\overline{AB} \cong \overline{CD}$.

If $\overline{AB} \cong \overline{CD}$, then $OE = OF$.

What is the value of x? Justify your answer.

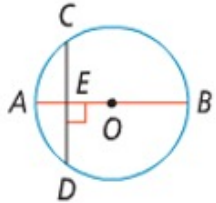16, *because the chords are equidistant from the center.*

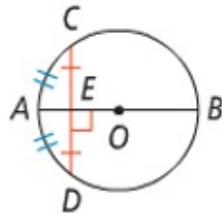# U7L2 – Theorems, Part 3

Theorems 12-8 to 12-10

If . . .
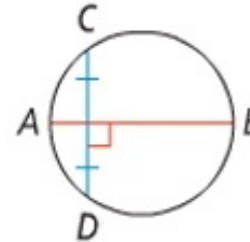$\overline{AB}$ is a diameter and $\overline{AB} \perp \overline{CD}$

Then . . .
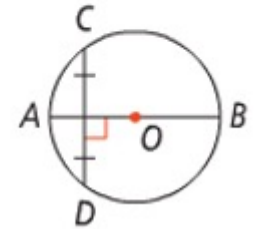$\overline{CE} \cong \overline{ED}$ and $\overarc{CA} \cong \overarc{AD}$

If . . .
$\overline{AB}$ is a diameter and $\overline{CE} \cong \overline{ED}$

Then . . .
$\overline{AB} \perp \overline{CD}$

If . . .
$\overline{AB}$ is the perpendicular bisector of chord $\overline{CD}$

Then . . .
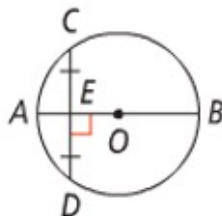$\overline{AB}$ contains the center of $\odot O$
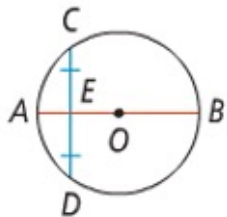
Find the value of x to the nearest tenth.
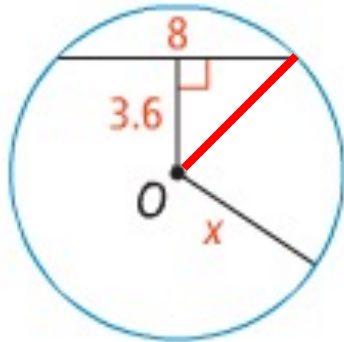
$$a^2 + b^2 = c^2$$

$$3.6^2 + 4^2 = x^2$$
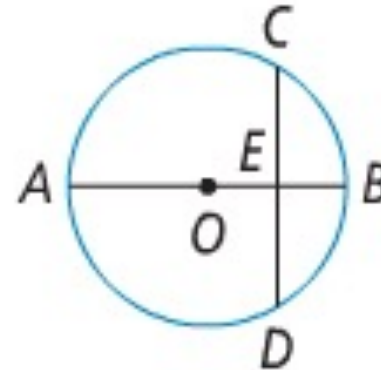
$$12.96 + 16 = x^2$$

$$x^2 = 28.96$$

$$\sqrt{x^2} = \sqrt{28.96}$$

$$x = 5.38$$

$$\boldsymbol{x = 5.4}$$

In circle O, $\overline{AB}$ is the diameter of the circle and $\overline{AB} \perp \overline{CD}$. What conclusions can you make?

$$CE = ED, \overparen{BC} = \overparen{BD}$$

Questions?

- Check the Message Board first

- Send a WebMail

- You can also make an appointment at https://elizondo.youcanbook.me

- You can also call me at (559) 549-3244. If I'm not available to answer your call, please leave a voicemail with your full name and phone number.