Geometry B Live Lesson Class

U7L3 – Inscribed Angles
(Ch. 12-3 in textbook)

Agenda

1. Review topics and problems from Unit 7, Lesson 3 – Inscribed Angles.

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	What to do
1. Complete 1 math lesson per day.	1. Go to your Planner in Connexus to find the math lesson for the day
2. Check your WebMail every day	2. Go to Connexus to find WebMail
3. Be prepared to spend 4 - 6 hours per day on schoolwork.	3. Complete lessons for the day from your Planner. Do not get behind on lessons.
4. Remind your Learning Coach to take daily attendance	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. Remember: You need at least 2 phone calls with Mr. Elizondo per semester.	6. Call (559) 549 - 3244 and leave a voicemail if call is not answered. Make an appointment at: https://elizondo.youcanbook.me Send a WebMail

U7L3 – 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.

U7L3 – Objectives

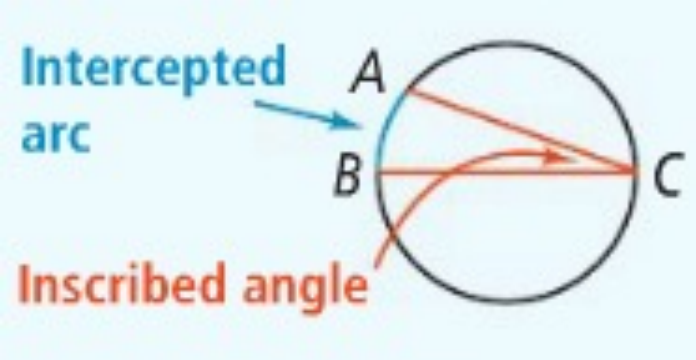
- Find the measure of an inscribed angle
- Find the measure of an angle formed by a tangent and a chord

U7L3 – Vocabulary

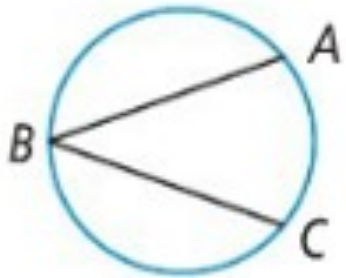
- inscribed angle
- intercepted arc

U7L3 – Introduction

Inscribed angle: an angle whose vertex is on the circle



Theorem 12-11

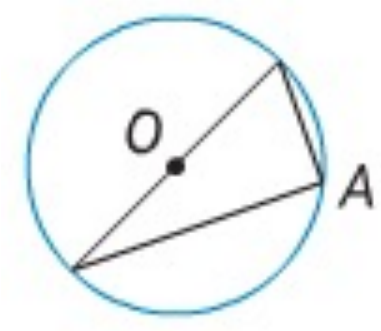


The measure of an inscribed angle is half the measure of the its intercepted arc.

$$m\angle B = \frac{1}{2} m\,\widetilde{AC}$$

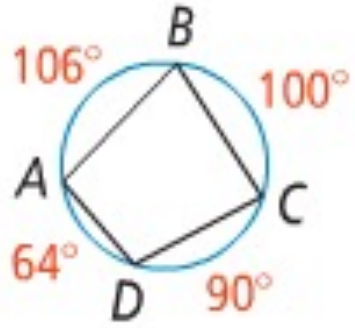
U7L3 – Inscribed Angles

What is $m\angle A$?



$The\ measure\ of\ \angle A\ is\ 90°$

What are $m\angle A, m\angle B, m\angle C$, and $m\angle D$?



$$m\angle A = \frac{100° + 90°}{2} = \frac{190°}{2} = \mathbf{95°}$$

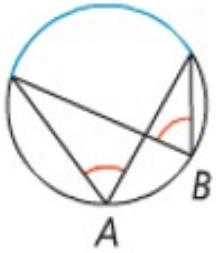
$$m\angle B = \frac{64° + 90°}{2} = \frac{154°}{2} = \mathbf{77°}$$

$$m\angle C = \frac{64° + 106°}{2} = \frac{170°}{2} = \mathbf{85°}$$

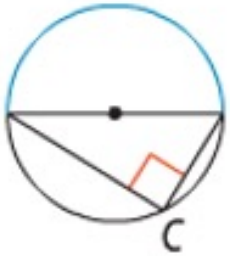
$$m\angle D = \frac{106° + 100°}{2} = \frac{206°}{2} = \mathbf{103°}$$

U7L3 – Inscribed Angles (Corollaries)

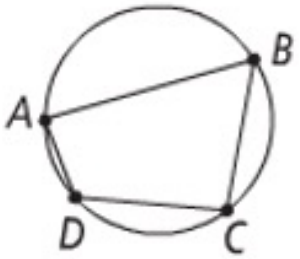
Corollary 1
Two inscribed angles that intercept the same arc are congruent.



Corollary 2
An angle inscribed in a semicircle is a right angle.

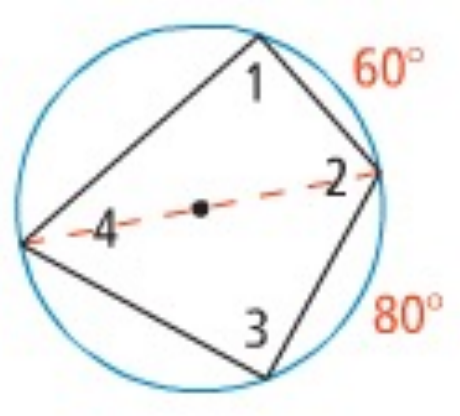


Corollary 3
The opposite angles of a quadrilateral inscribed in a circle are supplementary.



U7L3 – Inscribed Angles

In the diagram, what is the measure of each numbered angle?



$$m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 = 360°$$

$$m\angle 1 = 90° \qquad m\angle 3 = 90°$$

$$m\angle 4 = \frac{60° + 80°}{2} = \frac{140°}{2} = 70°$$

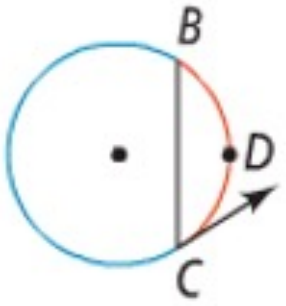
$$90° + m\angle 2 + 90° + 70° = 360°$$

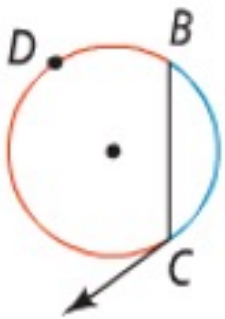
$$m\angle 2 + 250° = 360°$$

$$\boldsymbol{m\angle 2 = 110°}$$

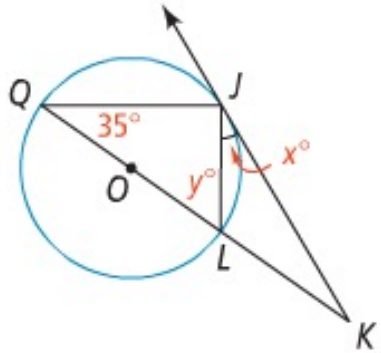
U7L3 – Inscribed Angles

Theorem 12-12





$\overline{KJ}$ is tangent to circle O. What are the values of x and y?



$m\angle JQL = 35°$

$m\angle QJL = 90°$

$\boldsymbol{y = m\angle QLJ = 55°}$

$\angle Q$ *and* $\angle KLJ$ *intercept the same arc* JL.

$\boldsymbol{x = m\angle LJK = 35°}$

U7L3 – To Know for the Quiz

- Finding missing angles or lengths when given tangent lines
- Using theorems to find missing lengths (chords, inscribed angles, etc.)

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.