# Geometry B Live Lesson Class

## U7L4 – Angle Measures and Segment Lengths

(Ch. 12-4 in textbook)

# Agenda

1. Review topics and problems from Unit 7, Lesson 4 – Angle Measures and Segment Lengths.

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.<br><br>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.<br><br>Make an appointment at: https://elizondo.youcanbook.me<br><br>Send a WebMail |

# U7L4 – 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.

# U7L4 – Objectives

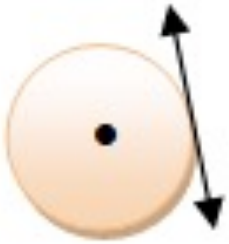
- Find the measures of angles formed by chords, secants, and tangents
- Find the lengths of segments associated with circles

# U7L4 – Vocabulary

- secant

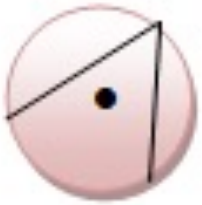
# U7L4 – Key Terms Review

central angle

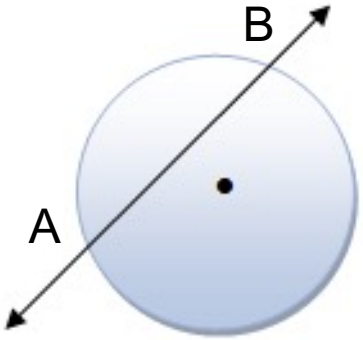


tangent

chord



inscribed angle



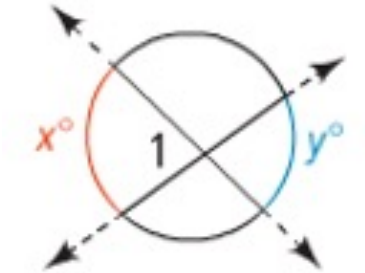

secant

A **secant** is a line that intersects a circle at 2 points. A secant can be a line, a ray or a line segment.

# U7L4 – Introduction

## Angle Measures

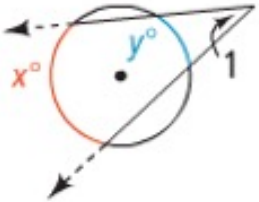
### Theorem 12-13

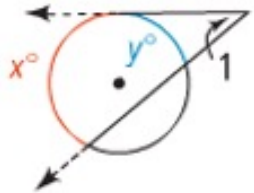


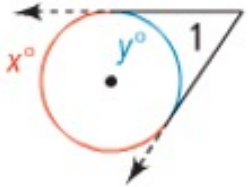

The measure of an angle formed by 2 lines that intersect inside a circle is half the sum of the measures of the intercepted arcs.

$$m\angle 1 = \frac{1}{2}(x + y)$$

### Theorem 12-14



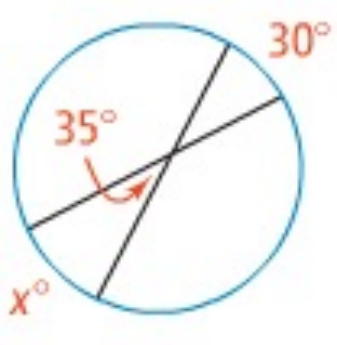




The measure of an angle formed by two lines that intersect outside a circle is half the difference of the measures of the intercepted arcs.

$$m\angle 1 = \frac{1}{2}(x - y)$$

# U7L4 – Angle Measures & Segment Lengths

Find the value of the variable.



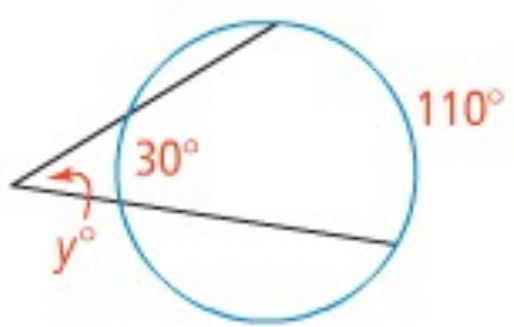

$$m\angle 1 = \frac{1}{2}(x + y)$$

$$35 = \frac{1}{2}(x + 30)$$

$$70 = x + 30$$

$$\boldsymbol{40 = x}$$

Find the value of the variable.




$$m\angle 1 = \frac{1}{2}(x - y)$$

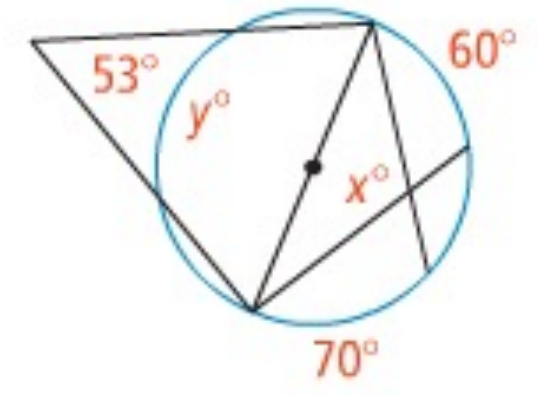
$$y = \frac{1}{2}(110 - 30)$$

$$y = \frac{1}{2}(80)$$

$$\boldsymbol{y = 40}$$

# U7L4 – Angle Measures & Segment Lengths

Find the value of the variable.




$$m\angle 1 = \frac{1}{2}(x - y)$$

$$53° = \frac{1}{2}(180 - y)$$

$$106 = 180 - y$$

$$\boldsymbol{y = 74}$$

$$m\angle 1 = \frac{1}{2}(x + y)$$

$$x = \frac{1}{2}(230) \qquad 360 - 130 = 230$$

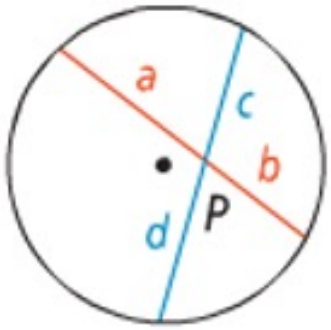
$$\boldsymbol{x = 115}$$

# U7L4 – Angle Measures & Segment Lengths

## Segment Lengths

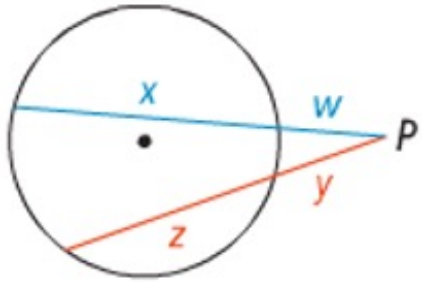
Theorem 12-15

I.




$$a \cdot b = c \cdot d$$

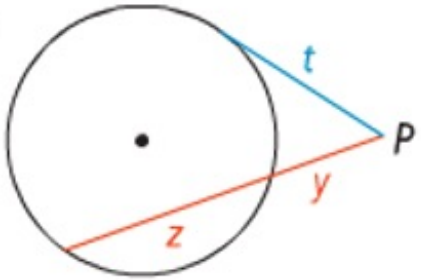
II.




$$(w + x)w = (y + z)y$$

$$\text{whole} \cdot \text{outside} = \text{whole} \cdot \text{outside}$$

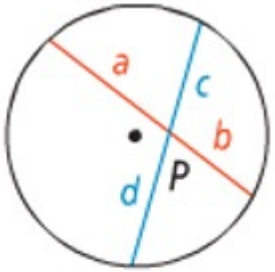
III.




$$(y + z)y = t^2$$

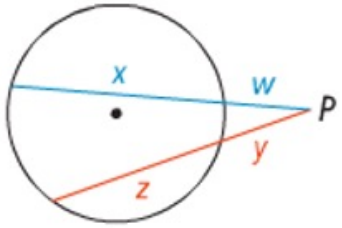
# U7L4 – Angle Measures & Segment Lengths

I.




$$a \cdot b = c \cdot d$$

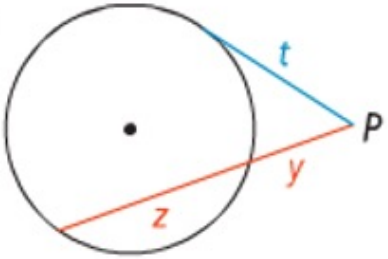
II.




$$(w + x)w = (y + z)y$$

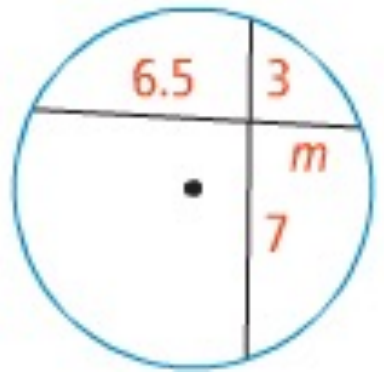
whole · outside = whole · outside

III.




$$(y + z)y = t^2$$

Find the value of the variable.



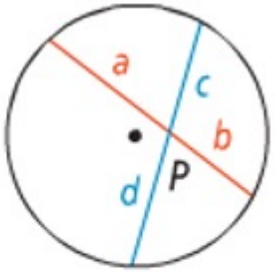

$$(6.5)(m) = (3)(7)$$

$$6.5m = 21$$

$$\boldsymbol{m = 3.2}$$

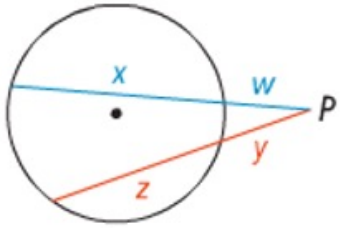
# U7L4 – Angle Measures & Segment Lengths

I.




$a \cdot b = c \cdot d$

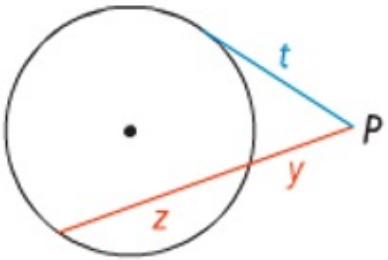
II.




$(w + x)w = (y + z)y$

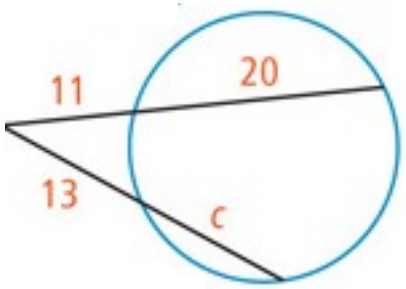
whole · outside = whole · outside

III.




$(y + z)y = t^2$

Find the value of the variable.




$$(11 + 20)11 = (13 + c)13$$

$$(31)11 = 169 + 13c$$

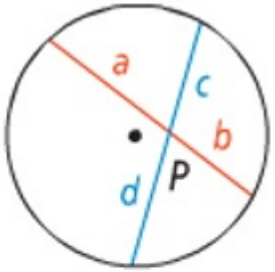
$$341 = 169 + 13c$$

$$172 = 13c$$

$$\boldsymbol{c = 13.2}$$

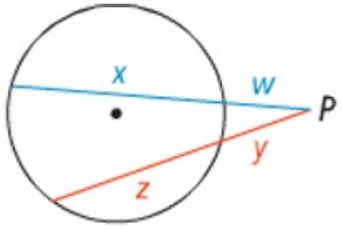
# U7L4 – Angle Measures & Segment Lengths

I.




$a \cdot b = c \cdot d$

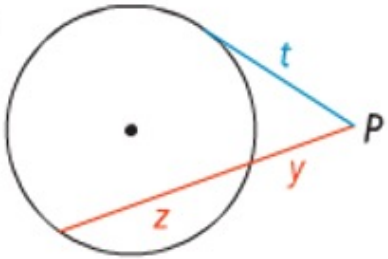
II.




$(w + x)w = (y + z)y$

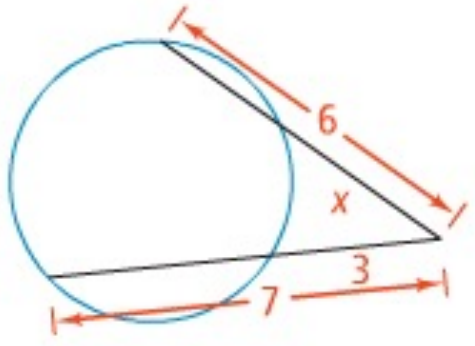
whole · outside = whole · outside

III.




$(y + z)y = t^2$

Find the value of the variable.




$(6)x = (7)3$

$6x = 21$

$\frac{6x}{6} = \frac{21}{6}$

$\boldsymbol{x = 3.5}$

# 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.