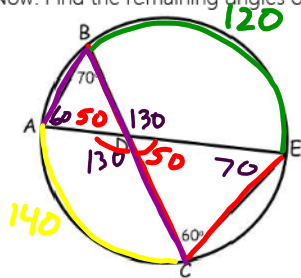


Geometry CC – Mr. Valentino  
 Unit 12 Day 9: Chord Lengths

Name: \_\_\_\_\_  
 Date: \_\_\_\_\_ Per: \_\_\_\_\_

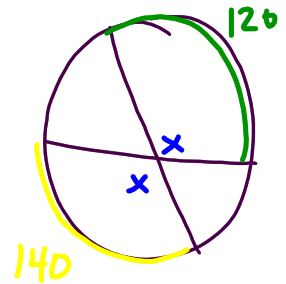
Aim: How can we find the lengths of intersecting chords?

Do Now: Find the remaining angles of  $\triangle ABD$  and  $\triangle CED$ .

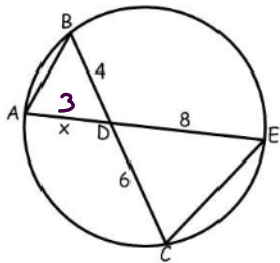


What can we say about  $\triangle ABD$  and  $\triangle CED$ ?

They are similar!



Based off the same circle from the do now, how can we find the value of  $x$ ?

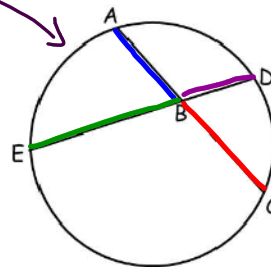


$$\frac{4}{6} = \frac{x}{8} \quad \star \quad \frac{4}{x} = \frac{8}{6}$$

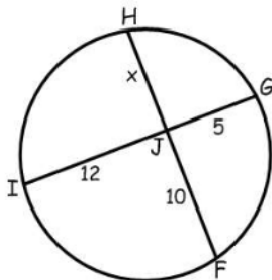
$$\frac{8x}{8} = \frac{24}{8}$$

$$x = 3$$

Intersecting Chords Theorem  
 $AB \cdot BC = EB \cdot BD$



What is the value of  $x$ ?

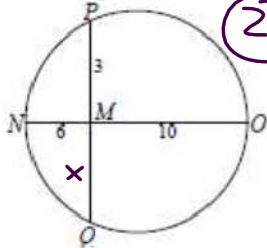


$$12 \cdot 5 = x \cdot 10$$

$$\frac{60}{10} = \frac{10x}{10}$$

$$x = 6$$

1. Find PQ  $\rightarrow 20 + 3$

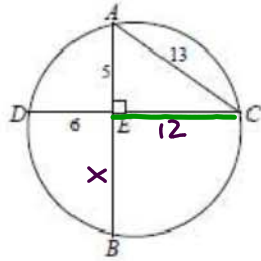


$$6 \cdot 10 = 3 \cdot x$$

$$60 = 3x$$

$$x = 20$$

2. Find EB

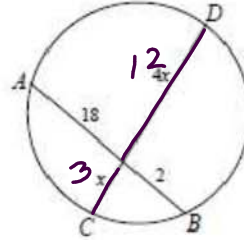


$$6 \cdot 12 = 5 \cdot x$$

$$72 = 5x$$

$$x = 14.4$$

3. Find CD = 15



$$18 \cdot 2 = 4x \cdot x$$

$$\frac{36}{4} = \frac{4x^2}{4}$$

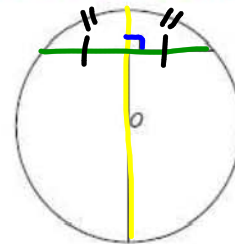
$$\sqrt{9} = \sqrt{x^2}$$

$$3 = x$$

4. Circle M has chords  $\overline{AEB}$  and  $\overline{CED}$ . If  $EB = 8$ ,  $ED = 10$ , and  $AE$  is 1 more than  $CE$ , find  $CE$ .

5. Circle M has chords  $\overline{AEB}$  and  $\overline{CED}$ . If  $CE = 4$ ,  $ED = 12$ , and  $EB$  is 2 more than  $AE$ , find  $AE$ .

In a circle, if a diameter is perpendicular to a chord, the diameter BISECTS the chord and its arcs



6. If  $AB = 6$  and  $OC = 4$ , find  $OB = 5$   
 3, 4, 5  
 5, 12, 13  
 Pythagorean Triple

7. If  $m\angle AOB = 90$ , find  $m\widehat{AE}$

$$180 - 45 = 135$$

