

Chapter 10- Lesson 3

Intersecting Chords of a Circle¹

Goals

Develop an understanding and facility with using concepts and skills related to intersecting chords.

1. Here's a puzzle!
 - a. Construct $\odot O$ with a radius of 5 cm. Then construct points A , B , C , and D on the circumference of the circle so that:
 - \overline{AC} and \overline{DB} intersect at point P , where P is in the interior of the circle.
 - $\overline{AP} = 4$ cm, and $\overline{BP} = 6$ cm

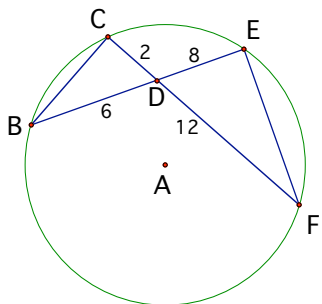
2. Add line segments to your diagram in problem 1 to create $\triangle APD$ and $\triangle BPC$ then compare your results to someone else's in your group. Is there anything interesting about your diagrams? Explain.

¹ Based on "Geometry, A Guided Inquiry", Chakerian, Crabill, Stien

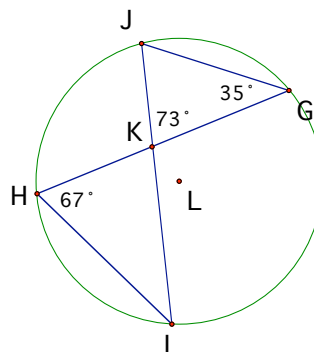
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3. What's wrong with the diagrams of $\odot A$ and $\odot L$ below? Explain.

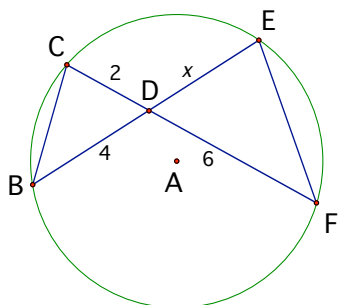
a.



b.



4. Use what you have learned to find the value of x in the diagram of $\odot A$ below. Justify.



5. Complete the following:

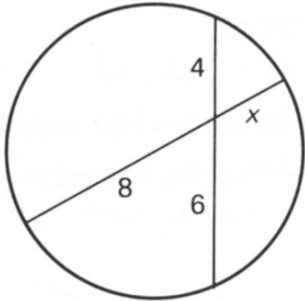
If two chords intersect in the interior of a circle, then the _____ of the lengths of the sections of one _____ is equal to the product of the _____ of the sections of the other _____.

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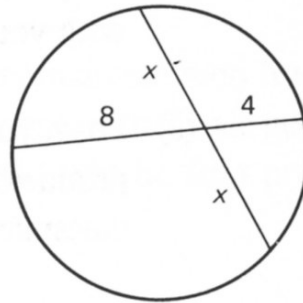
Puzzles- Justify Answers

1. Find x . Justify with explanations and calculations.

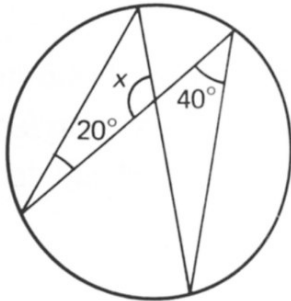
(a)



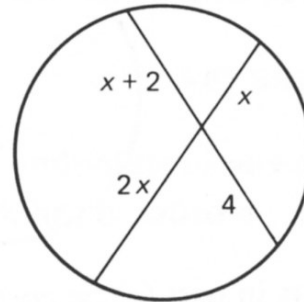
(b)



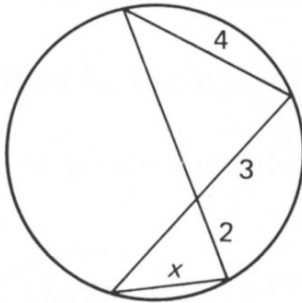
(c)



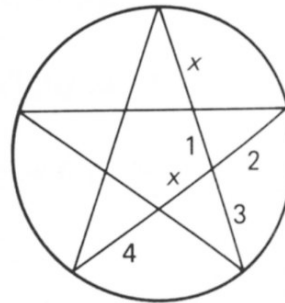
(d)



(e)



(f)



2. Create your own puzzle that requires the use of the concepts and skills of this lesson to solve.