

Name: _____ # _____

Geometry: Period _____

Ms. Pierre

Date: _____

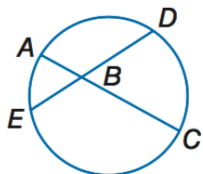
Intersecting Chords (Segments)

Today's Objective

SWBAT determine the length of segments that intersect in the interior of a circle.

When two chords intersect inside a circle, each chord is divided into two segments, called *chord segments*.

In the figure, chord \overline{AC} is divided into segments \overline{AB} and \overline{BC} .



Likewise, chord \overline{ED} is divided into segments \overline{EB} and \overline{BD} .

The following theorem describes the relationship among four segments formed by the intersection of two chords in the interior of a circle.

Theorem 10.15

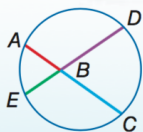
Segments of Chords Theorem

For Your

FOLDABLE

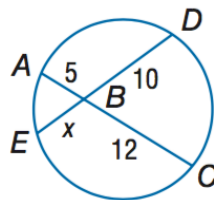
Words If two chords intersect in a circle, then the products of the lengths of the chord segments are equal.

Example $AB \cdot BC = DB \cdot BE$



Example 1

Find x .



$$AB \cdot BC = EB \cdot BD$$

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

$$60 = 10x$$

$$6 = x$$

Theorem 10.15

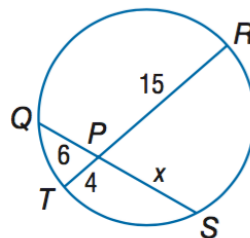
Substitution

Multiply.

Divide each side by

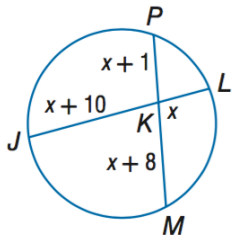
☑ Check for Understanding

Find x .



Example 2

Find x .



$$JK \cdot KL = PK \cdot KM$$

$$(x + 10) \cdot x = (x + 1)(x + 8)$$

$$x^2 + 10x = x^2 + 9x + 8$$

$$10x = 9x + 8$$

$$x = 8$$

Theorem 10.15

Substitution

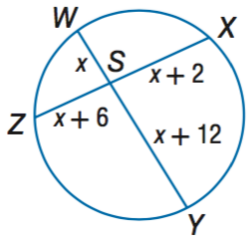
Multiply.

Subtract x^2 from each side.

Subtract $9x$ from each side.

☑ Check for Understanding

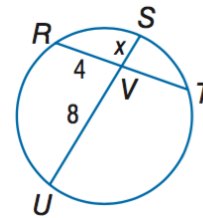
Find x .



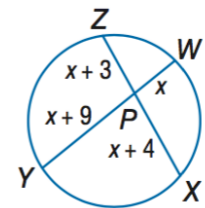
Guided Practice

Find x .

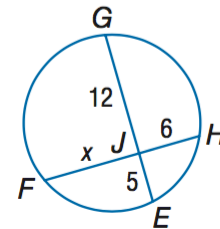
1.



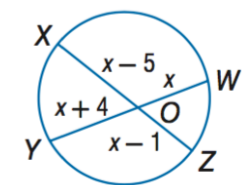
2.



3.

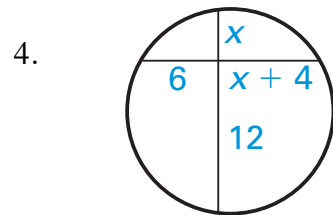
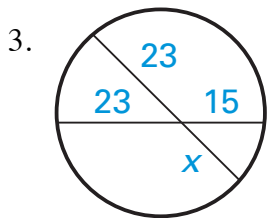
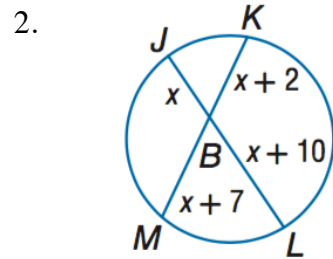
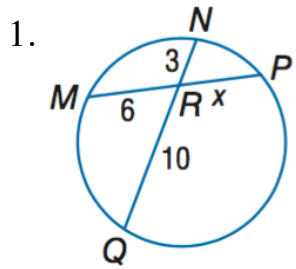


4.



Independent Practice

Find x .



Home Work

Find x .

