Chapter 10
Circles

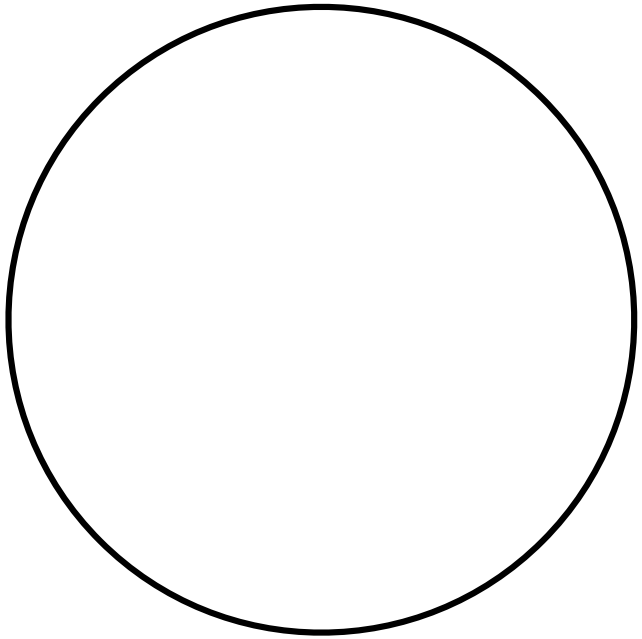
10.3 Using Chords

What is a chord?

- State the definition:

- Is a diameter a chord? Radius?

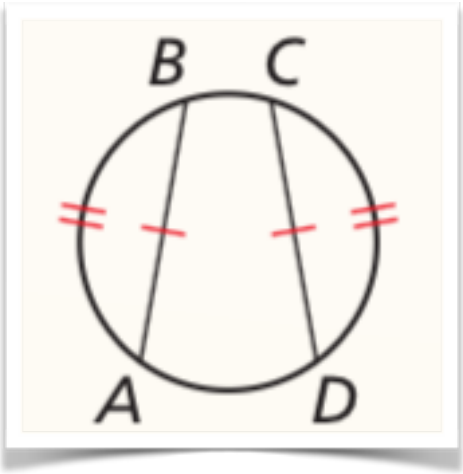
- How does it compare to a secant? A tangent?

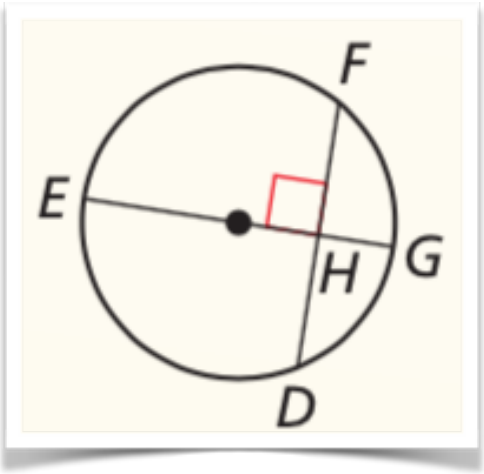


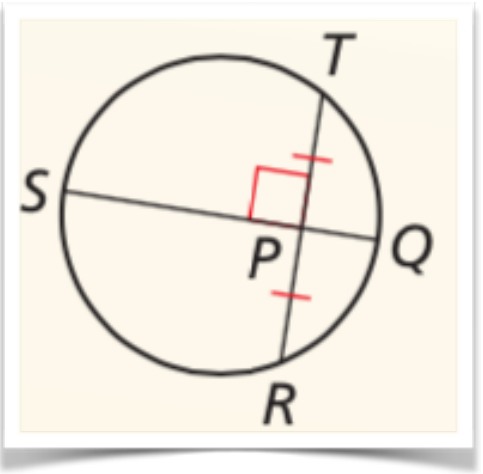
10.3 Using Chords

Theorems

Congruent Corresponding Chords Theorem	In the same circle, or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.
Perpendicular Chord Bisector Theorem	If a diameter of a circle is perpendicular to a chord, then the diameter bisects the chord and its arc.
Perpendicular Chord Bisector Converse	If one chord of a circle is a perpendicular bisector of another chord, then the first chord is a diameter.







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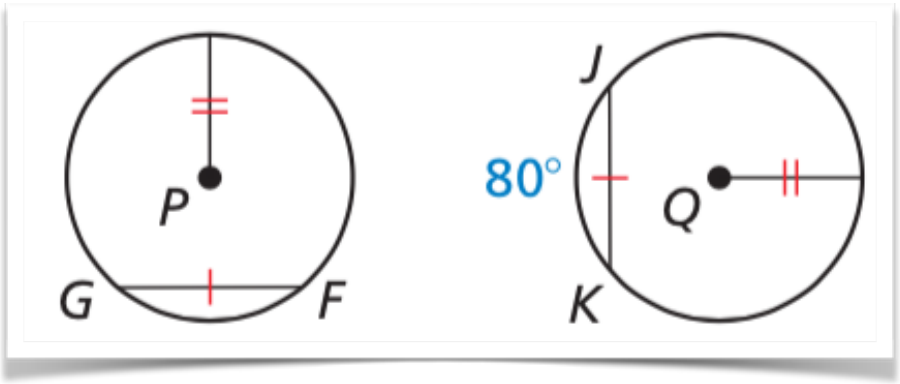
Examples

a) Solve for $m\overset{\frown}{FG}$

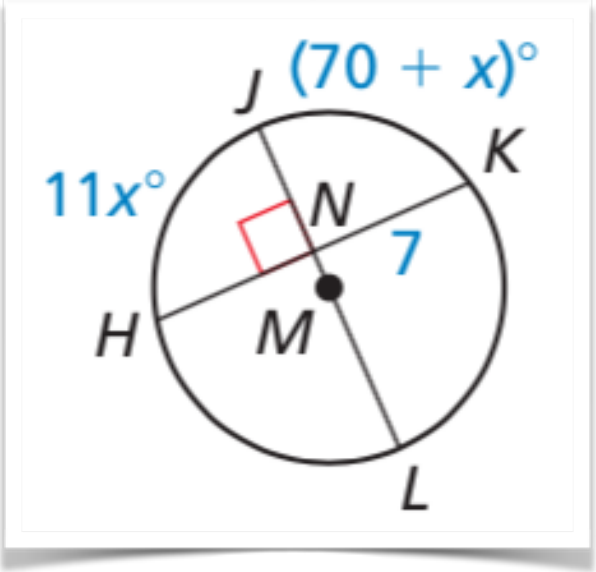


b) HK =

$m\overset{\frown}{HK} =$

Does $m\overset{\frown}{HL} = m\overset{\frown}{JK}$?

Why or why not?



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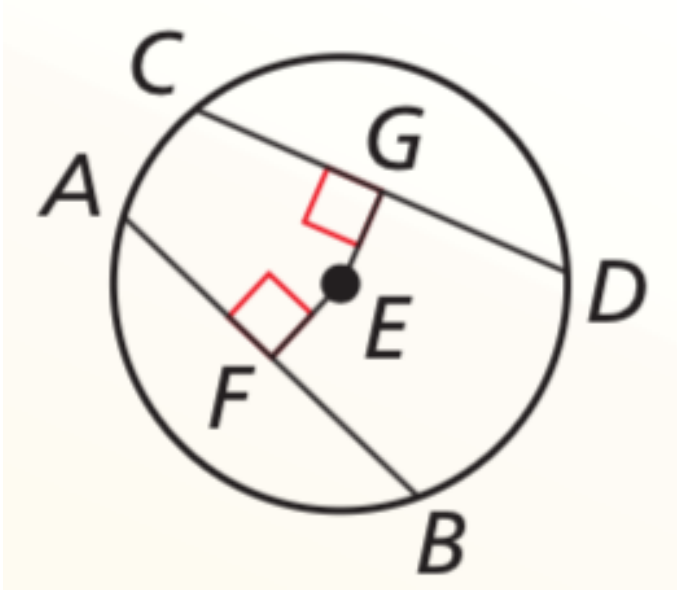
Theorem

Equidistant Chords Theorem	In the same circle, or in congruent circles, two chords are congruent if and only if they are equidistant from the center.



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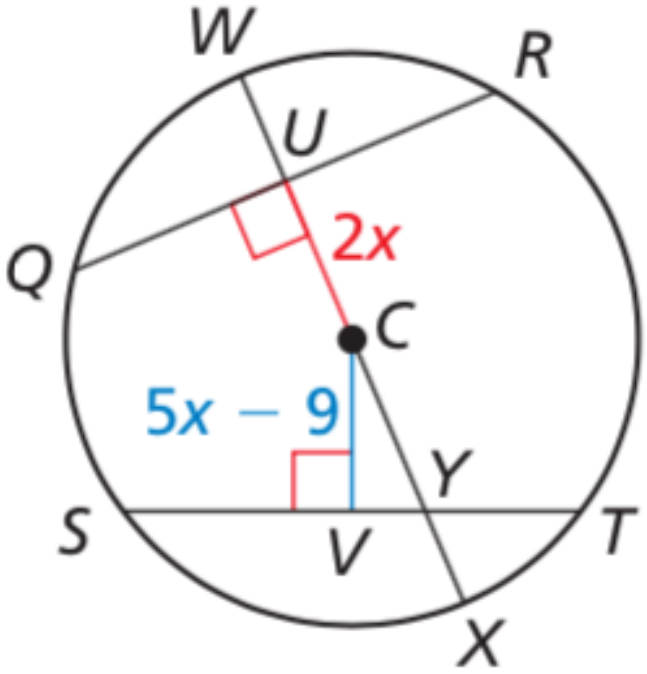
Examples

Given: QR = ST = 16,

CU = 2x,

CV = 5x - 9

What is the radius of circle C?



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Example

Given: $\overline{AB} \perp \overline{CD}$

Solve for the length CD.