

Chapter 10

Circles



10.1 Lines and Segments That Intersect Circles

10.2 Finding Arc Measures

10.3 Using Chords

10.4 Inscribed Angles and Polygons

10.5 Angle Relationships in Circles

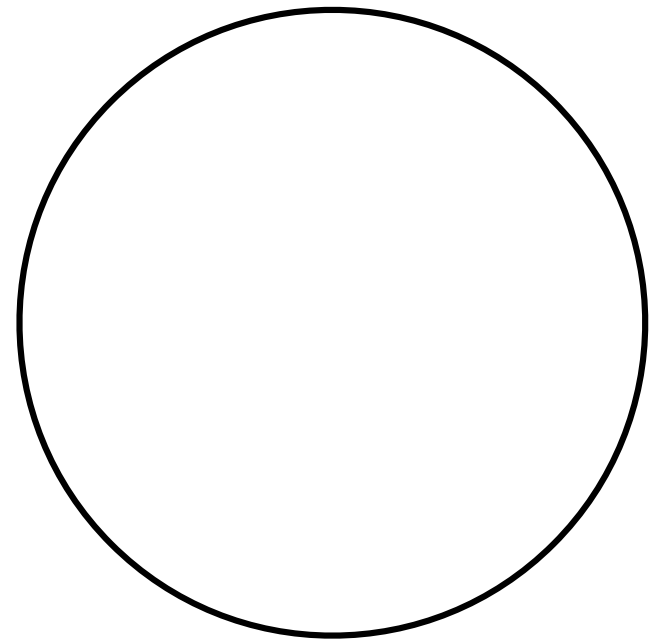
10.6 Segment Relationships in Circles

10.7 Circles in the Coordinate Plane

10.3 Using Chords

What is a chord?

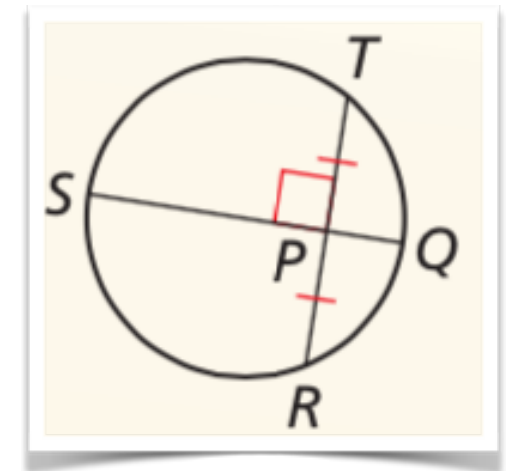
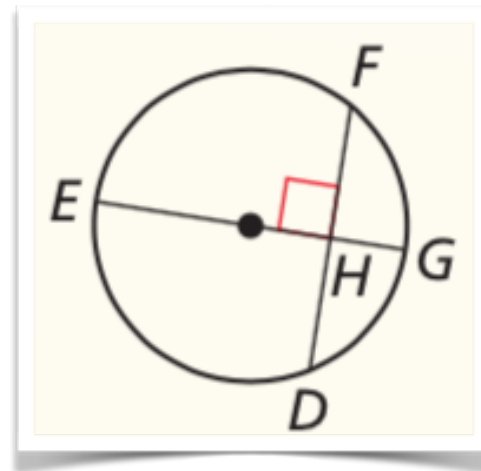
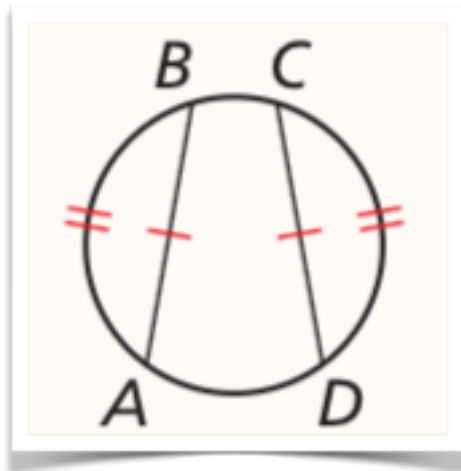
- State the definition:
- Is a diameter a chord? Radius?
- How does it compare to a secant? A tangent?



10.3 Using Chords

Theorems

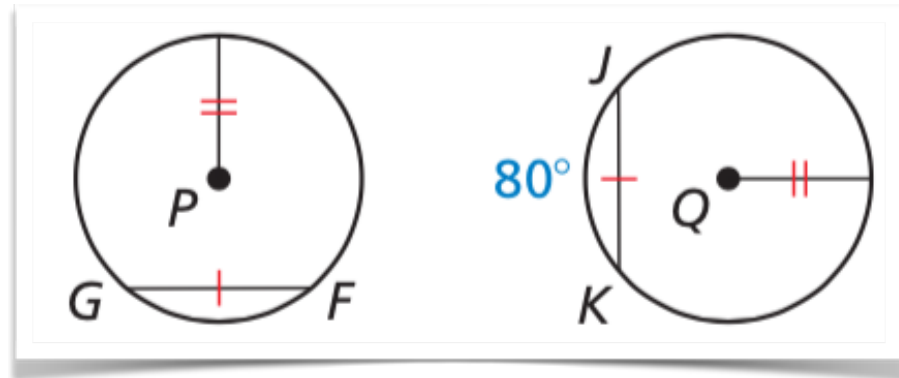
Congruent Corresponding Chords Theorem	In the same circle, or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.
Perpendicular Chord Bisector Theorem	If a diameter of a circle is perpendicular to a chord, then the diameter bisects the chord and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



10.3 Using Chords

Examples

a) Solve for $m\widehat{FG}$

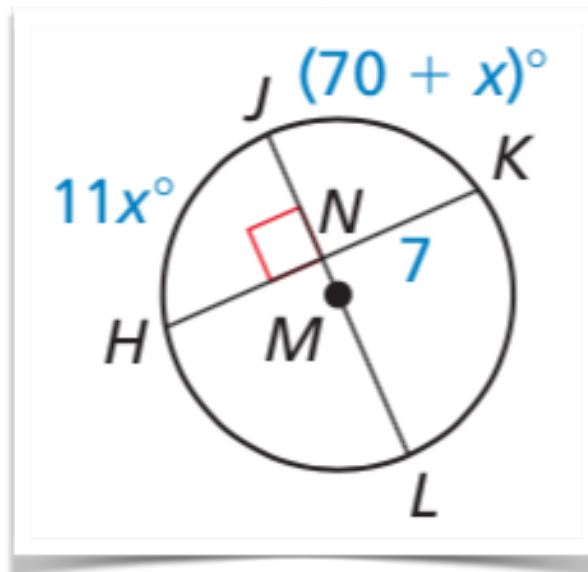


b) $HK =$

$$m\widehat{HK} =$$

Does $m\widehat{HL} = m\widehat{JK}$?

Why or why not?

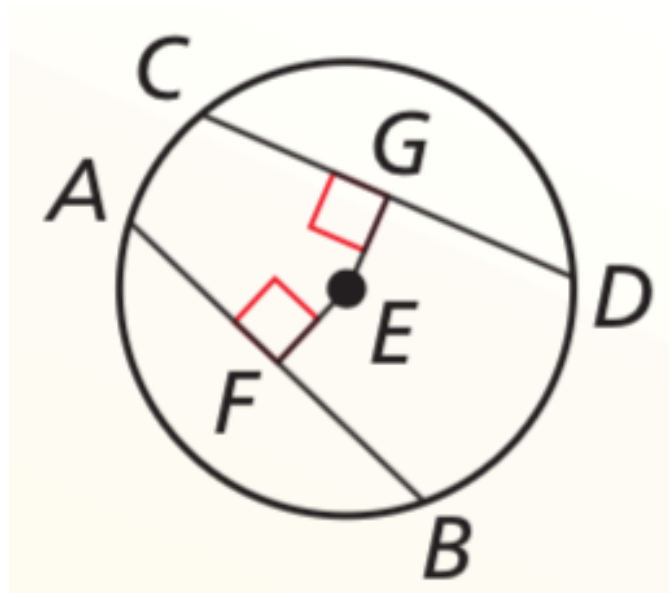


10.3 Using Chords

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.



10.3 Using Chords

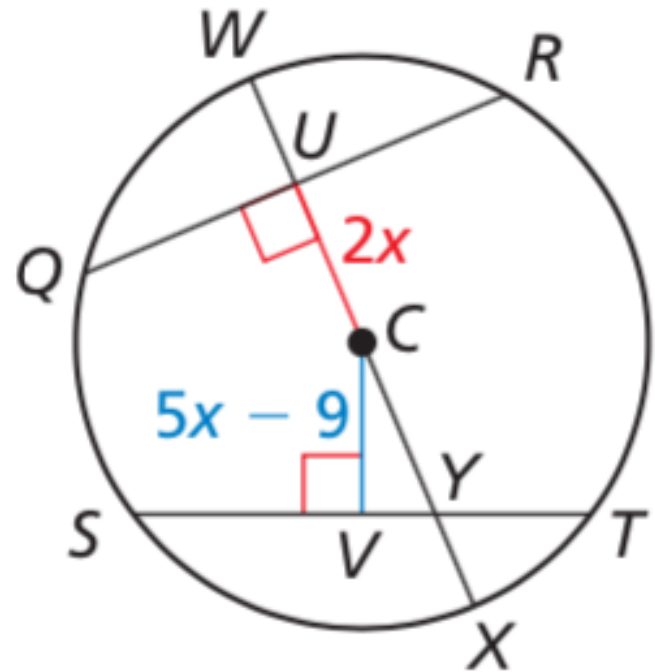
Examples

Given: $QR = ST = 16$,

$CU = 2x$,

$CV = 5x - 9$

What is the radius of circle C?



10.3 Using Chords

Example

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

Solve for the length CD .

