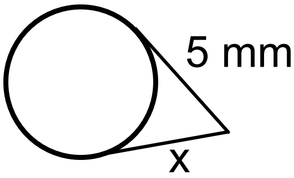
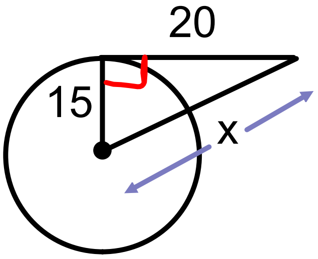
Starter

Find the value of x.

1)



2)

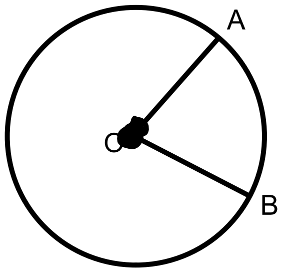


3) Draw two circles that are externally tangent.

4) Draw two circles that are internally tangent.

Apr 21-2:59 PM

10-5 Angles Related to a Circle



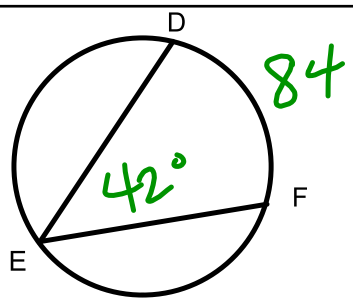
Central Angle

m <AOB = m Arc AB

Example:

Given m<AOB = 72^o, Find m Arc AB

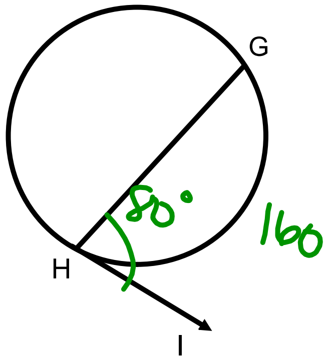
Apr 27-9:37 AM



Inscribed Angle

m <DEF = 1/2 (m Arc DF)

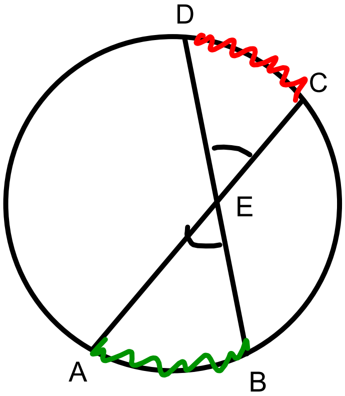
Example:
Given m Arc DF = 84°, Find m <DEF



Tangent-chord Angle

m <GHI = 1/2 (m Arc GH)

Example:
Given m Arc GH = 160°, Find m <GHI



Chord-chord Angle

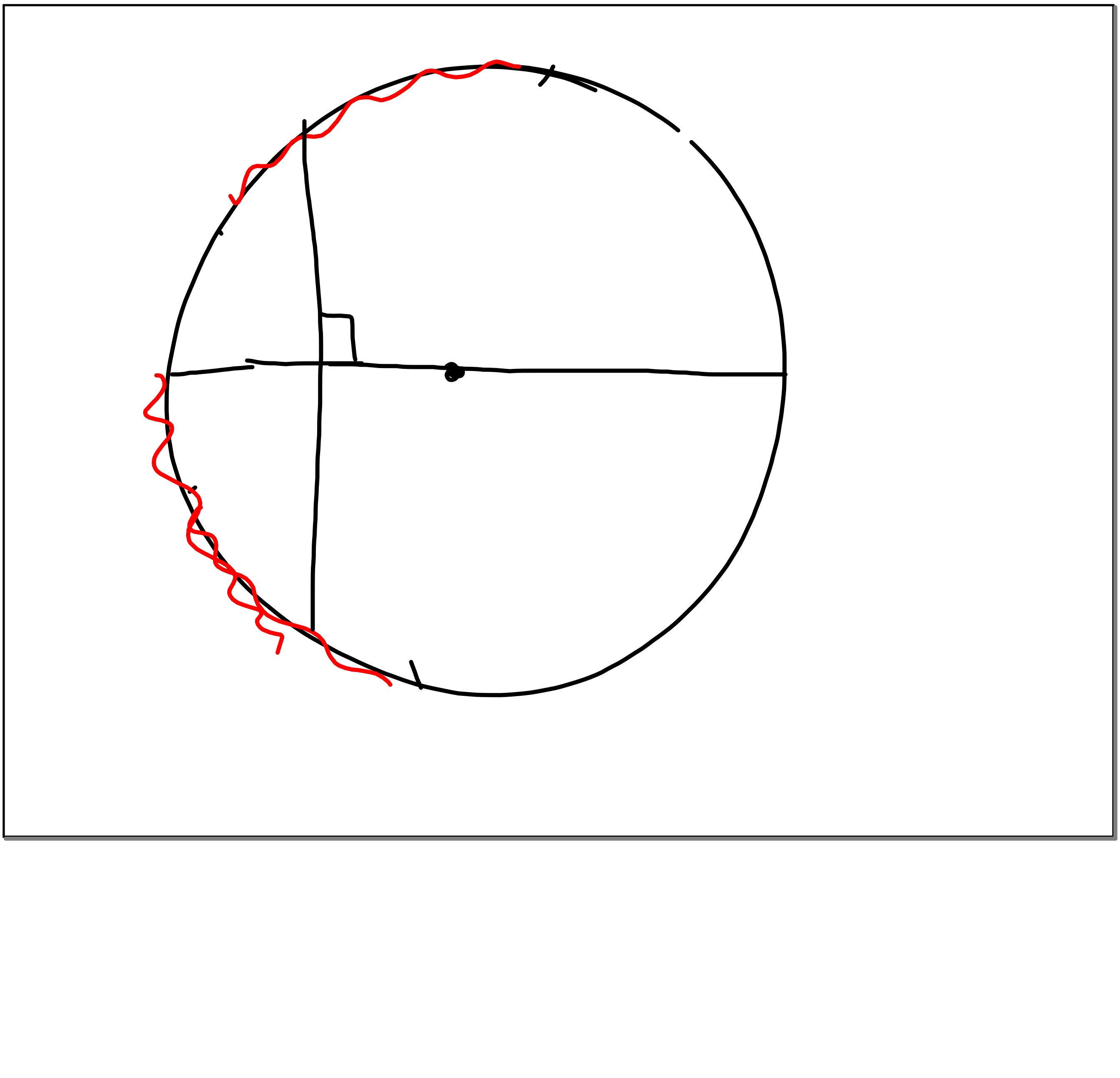
m <DEC = 1/2 (m Arc AB + m Arc CD)
m <AEB = 1/2 (m Arc AB + m Arc CD)

m <DEA = 1/2 (m Arc DA + m Arc CB)
m <CEB = 1/2 (m Arc DA + m Arc CB)

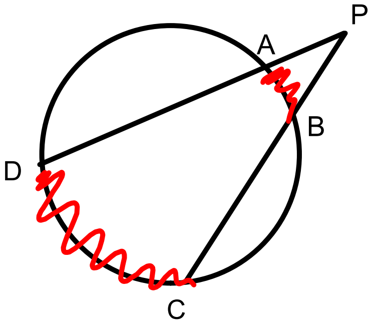
Example 1:
Given m Arc BC = 112°
m Arc AD = 186°
Find m <DEA

Example 2:
Given m <DEC = 50°
m Arc AB = 72°
Find m Arc DC

Apr 27-9:50 AM



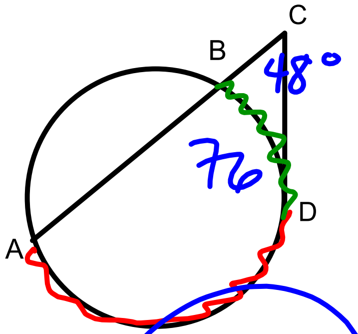
Apr 28-12:28 PM



Secant-secant Angle

m <P = 1/2 (m Arc DC - m Arc AB)

Example:
Given m Arc DC = 110°, m Arc AB = 32°
Find m <P



Secant-tangent Angle

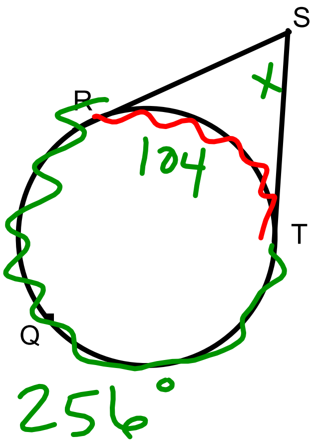
m <C = 1/2(m Arc AD - m Arc BD)

Example:
Given m Arc BD = 76°, m <C = 48°
Find m Arc AD

$x = 172$

$48 = \frac{1}{2}(x - 76)$

$96 = x - 76$



Tangent-tangent Angle

m <S = 1/2 (m Arc RQT - m Arc RT)

Example:
Given m Arc RT = 104, Find m <S

$$x = \frac{1}{2}(256 - 104) = 76$$

Confused? See the summary on the next slide!
(and p. 472 of your textbook!)

Summary

If the vertex is...

- AT THE CENTER the angle is equal to the intercepted arc
- ON THE CIRCLE the angle is half the intercepted arc
- INSIDE THE CIRCLE (not at center) the angle is half the sum of the intercepted arcs
- OUTSIDE THE CIRCLE the angle is half the difference of the intercepted arcs

Apr 27-11:16 AM

Classwork

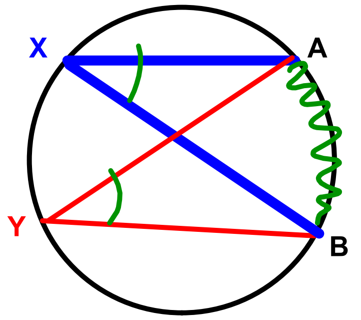
- 10.5 Angles Related to a Circle Worksheet

10.6 More Angle-Arc Theorems

Theorem: If two inscribed or tangent-chord angles intercept the same arc, then they are congruent.

Given: X and Y are inscribed angles intercepting arc AB.

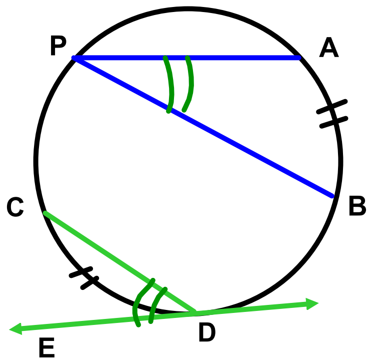
Conclusion: $\angle X \cong \angle Y$



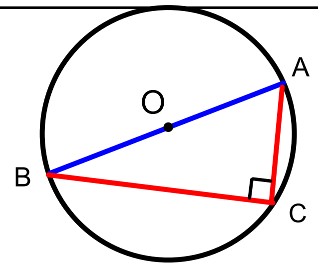
Theorem: If two inscribed or tangent-chord angles intercept congruent arcs, then they are congruent.

If $\overleftrightarrow{ED}$ is the tangent at D and $\overset{\frown}{AB} \cong \overset{\frown}{CD}$

then we may conclude that $\angle P \cong \angle CDE$



Theorem: An angle inscribed in a semicircle is a right angle.

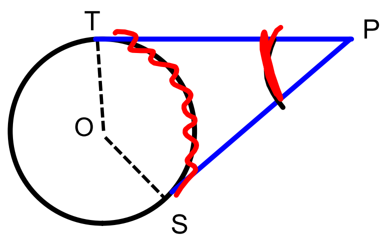


How can that be proven?

Theorem: The sum of the measures of a tangent-tangent angle and its minor arc is 180.

(not a secant-secant)

The $m\angle P + mTS = 180$



How can that be proven?

Read the Sample Problems

on pages 480 - 481

Homework

- 10.5 Angles Related to a Circle Worksheet
- p. 481 #[redacted]5, 7, 10, 14

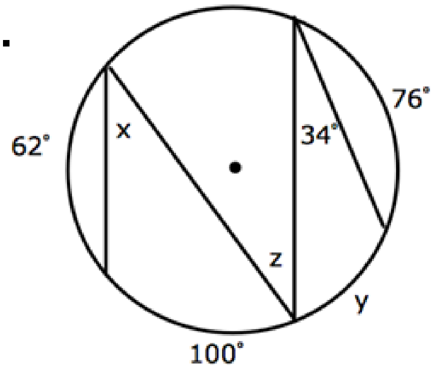
If you didn't finish in class

Apr 27-11:32 AM

Exit Slip

Find the missing measures. SHOW WORK!

1.



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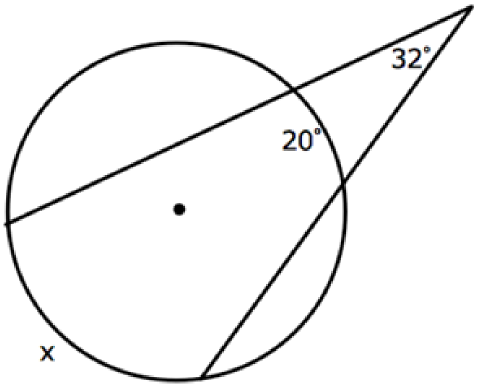
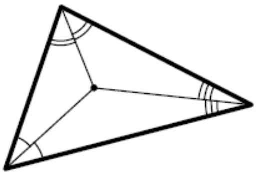


Name the point of concurrency shown.

(incenter, circumcenter, orthocenter or centroid)

1.



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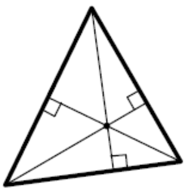

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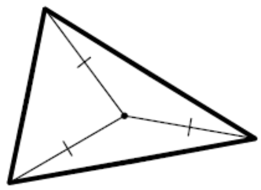
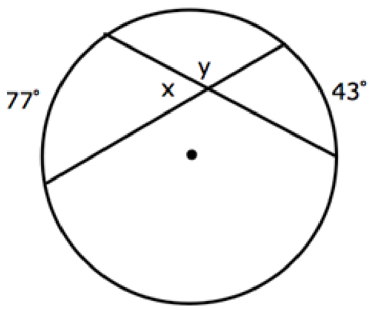
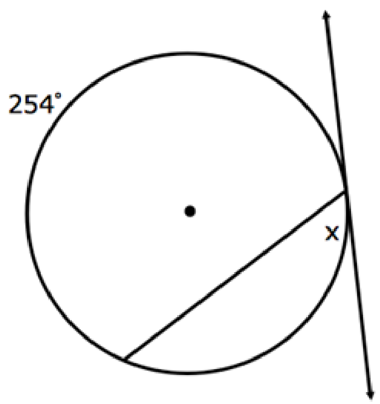


EXIT SLIP

Apr 21-3:06 PM





May 1-2:23 PM

May 2-8:13 AM