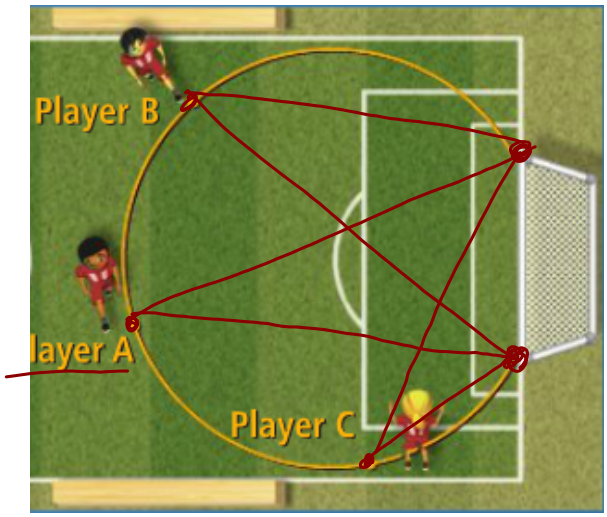
Geometry

Chapter 12

Section 12-3

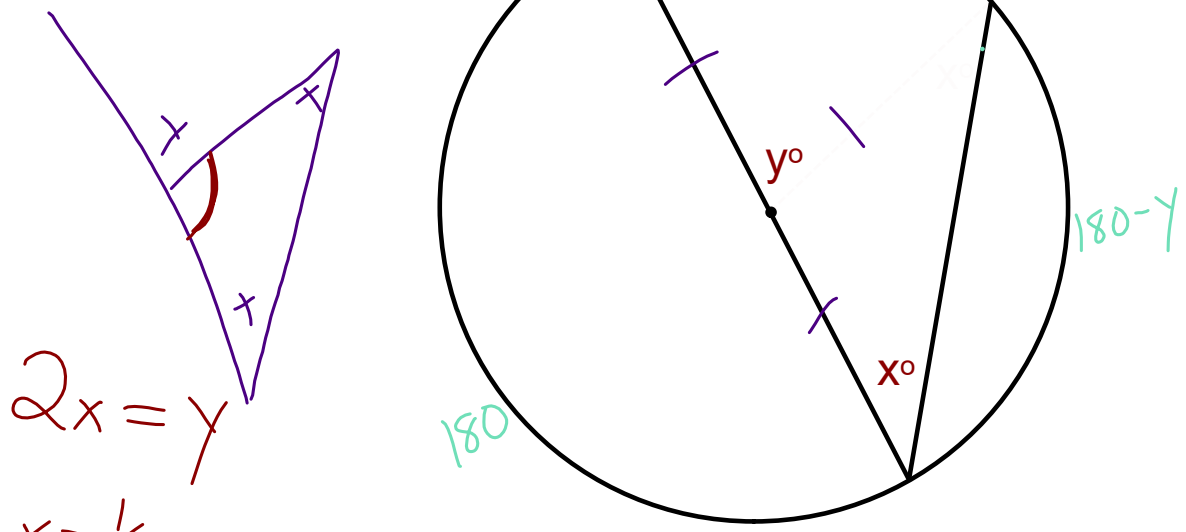
May 7-9:46 PM

Three high-school soccer players practice kicking goals from the points shown in the diagram. All three points are along an arc of a circle. Player A says she is in the best position because the angle of her kicks toward the goal is wider than the angle of the other players' kicks. Do you agree? Explain.



Apr 22-6:58 PM

What is the relationship between x and y?



$2x = y$

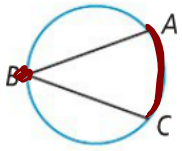
$x = \frac{1}{2}y$

May 6-9:05 AM

take note

Theorem 12-11 Inscribed Angle Theorem

The measure of an inscribed angle is half the measure of its intercepted arc.

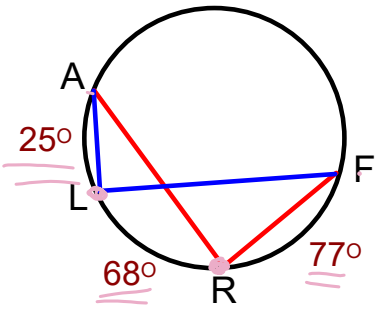


$m\angle B = \frac{1}{2}m\overset{\frown}{AC}$

$2 \cdot m\angle B = m\overset{\frown}{AC}$

May 7-9:59 PM

What are the measures of ∠ARF and ∠ALF?



$\frac{1}{2}m\overset{\frown}{AF}$ $\frac{1}{2}m\overset{\frown}{AF}$

$\frac{1}{2}(190) = 95$

$360-(25+68+77) = m\overset{\frown}{AF}$

145

$360-170=190$

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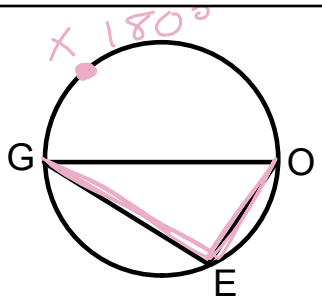

GO is a diameter of the circle.

What is m∠GEO?

$\frac{1}{2}(m\overset{\frown}{GXO}) = \frac{1}{2}(180) = 90$

If *EO* = 16 and *GE* = 30, find the length of *GO*.

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What is m∠ MAN + m∠ MUN?

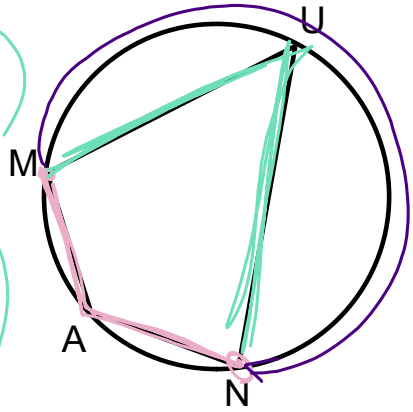
$\frac{1}{2}(m\overset{\frown}{MUN}) + \frac{1}{2}(m\overset{\frown}{MAN})$

$\frac{1}{2}(m\overset{\frown}{MUN} + m\overset{\frown}{MAN})$

$\frac{1}{2}(360)$

2

180



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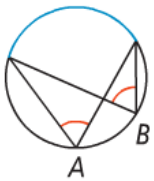
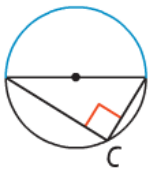
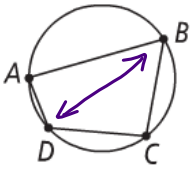
Corollary 1 ✝
Two inscribed angles that intercept the same arc are congruent.



Corollary 2
An angle inscribed in a semicircle is a right angle.



Corollary 3
The opposite angles of a quadrilateral inscribed in a circle are supplementary.



$m\angle D + m\angle B = 180$

$m\angle A + m\angle C = 180$

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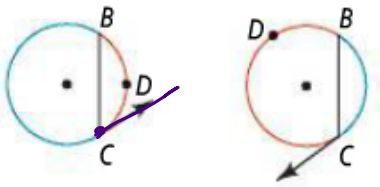
take note

Theorem 12-12

The measure of an angle formed by a tangent and a chord is half the measure of the intercepted arc.



$m\angle C = \frac{1}{2} m\overset{\frown}{BDC}$

Apr 22-8:21 PM

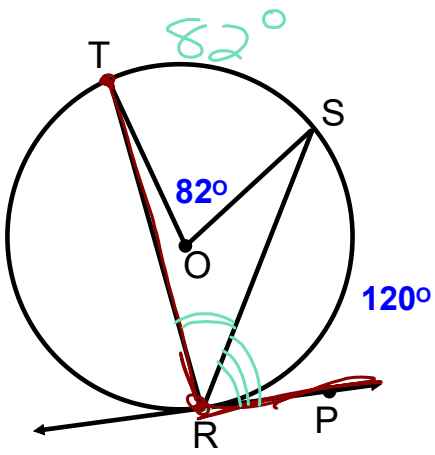
What are m∠TRP, m∠SRT and m∠SRP?

$m\overset{\frown}{RST} = 202$

$m\angle TRP = \frac{1}{2}(202) = 101$

$m\angle SRT = \frac{1}{2} m\overset{\frown}{ST} = 41$

$m\angle SRP = \frac{1}{2}(120) = 60$



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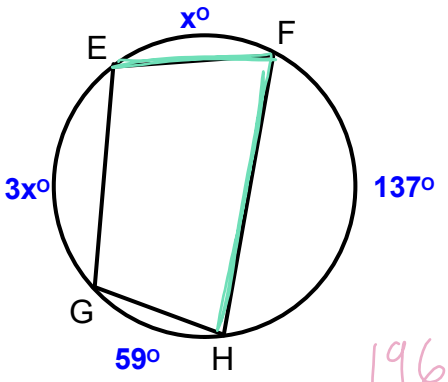
What are m∠ EFH and m∠ GEF?



$4x+59+137=360$
$-196 \quad -196$
$4x=164$
$x=41$

$m\angle EFH=\frac{1}{2}(3x+59)$

$\frac{1}{2}(3\cdot 41+59)$
123
$\frac{1}{2}(182)$
91

$m\angle GEF=\frac{1}{2}(137+59)$
196
$=98$

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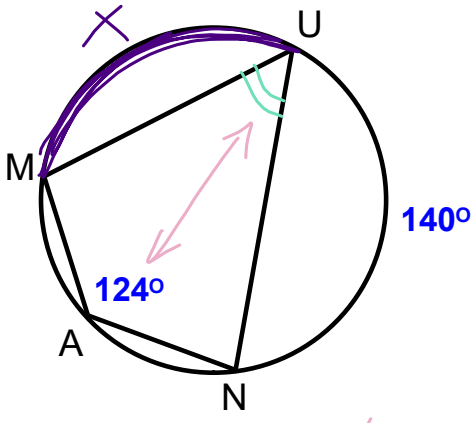
What are m $\overset{\frown}{MU}$ and m∠ U?



$m\angle MAN=\frac{1}{2}(m\overset{\frown}{MUN})$

$124=\frac{1}{2}(140+x)$

$248=140+x$
-140
$108=x$

$180-124=56$

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Homework

Pages 784 - 785

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