Geometry 4/24/18

- Turn in Inscribed Angles Day 2 Worksheet
- Complete the 10.5 "other angle relationships in circles" notes.
- Complete the 10.5 assignment and the 10.1 - 10.5 review
- Wednesday go over 10.1 - 10.5 review and complete the circle review.
- Thursday go over circle review
- Friday - Summative Assessment - Circles part 1.

Geometry 1.2 Name_____

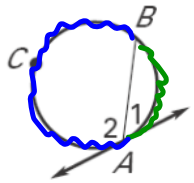
Class-Notes Date_____Period_____

10.5 Apply Other Angle Relationships in Circles

Goal • Find the measure of angles inside or outside a circle.

THEOREM 10.11: If a **tangent** and a **chord** intersect at a point on a circle, then the **measure of each angle formed** is **one half the measure of its intercepted arc.**

Same as inscribed ∠s



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

$m\angle 2 = \frac{m\overset{\frown}{ACB}}{2}$

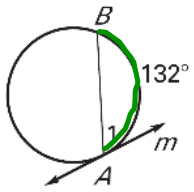
$m\overset{\frown}{BA} = 2 \cdot m\angle 1$

$m\overset{\frown}{ACB} = 2 \cdot m\angle 2$

Example 1: ***Find angle and arc measures***

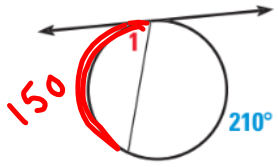
Line *m* is tangent to the circle. Find the indicated measure.

a.) $m\angle 1 = \frac{132}{2} = 66°$



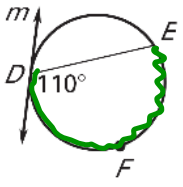
b.) $m\angle 1 = \frac{150}{2} = 75°$

360 − 210 = 150



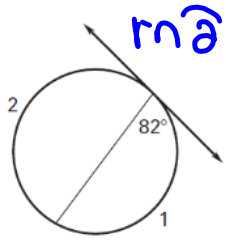
Checkpoint: Secant-Tangent Angle.

a.) $m\overset{\frown}{EFD} = 2 \cdot 110 = 220°$



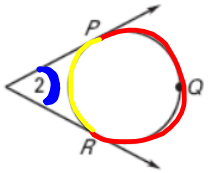
b.) $m\overset{\frown}{1} = 2 \cdot 82 = 164°$

$m\overset{\frown}{2} = 360 - 164 = 196°$



THEOREM 10.13: ANGLES OUTSIDE THE CIRCLE THEOREM

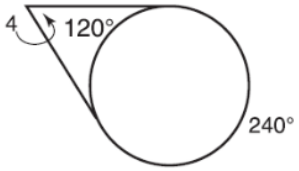
If a tangent and a secant, two tangents, or two secants intersect ***outside*** a circle, then the measure of the angle formed is ***one half the difference*** of the measures of the intercepted arcs.



$m\angle 2 = \frac{(m\overset{\frown}{PQR} - m\overset{\frown}{PR})}{2} = \frac{\text{Large Arc} - \text{Small Arc}}{2}$

Example 1: Two Tangents

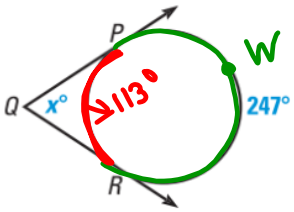
a.) $m\angle 4$



$m\angle 4 = \frac{240 - 120}{2} = \frac{120}{2} = 60°$

b.) Find x.

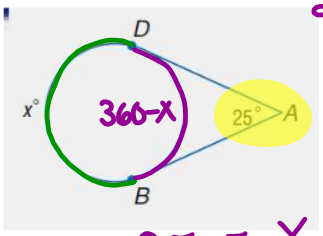
$m\angle Q$ $\quad m\overset{\frown}{PR} = 360 - 247 = 113$



$m\angle Q = \frac{247 - 113}{2} = \frac{134}{2}$

$m\angle Q = 67°$

c.) Find x. $\quad \angle A = \frac{\text{Big Arc} - \text{Lil' Arc}}{2}$



$25 = \frac{x - 1(360 - x)}{2}$

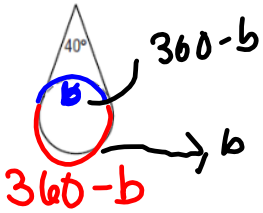
$25 = \frac{x - 360 + x}{2}$

$25 = \frac{2x - 360}{2}$

$25 = x - 180$

$x = 25 + 180 = 205°$

d.) Find x. **JEWELRY** A jeweler wants to craft a pendant with the shape shown. Use the figure to determine the measure of the arc at the bottom of the pendant.



$40 = \frac{360 - b - b}{2}$

$40 = \frac{360 - 2b}{2}$

$40 = 180 - b$

$-180 \quad -180$

$-140 = -b$

$b = 140$

Homework: 10.5 Skills Practice.

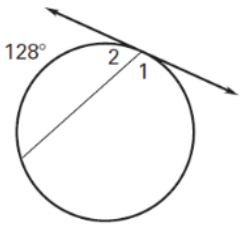
10.5

NAME _____ DATE _____ PERIOD _____

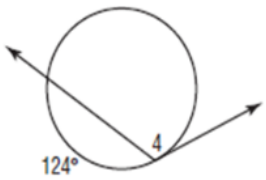
Skills Practice

Secants, Tangents, and Angle Measures

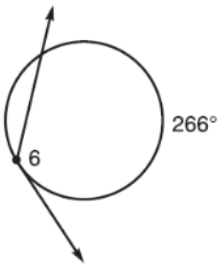
1.



2. $m\angle 4$



3. $m\angle 6$



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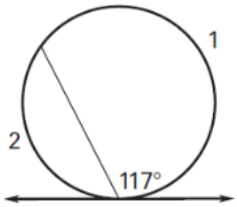
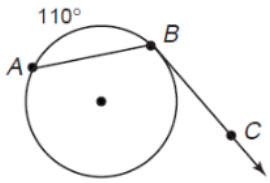


5. $\angle ABC$



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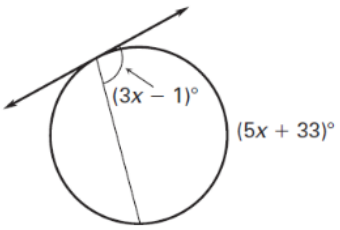

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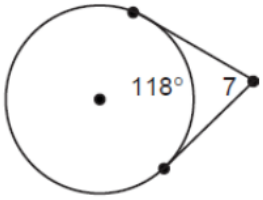

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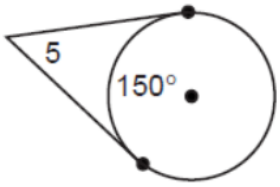

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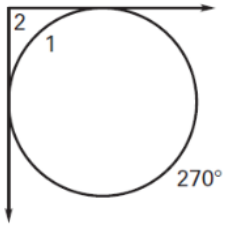

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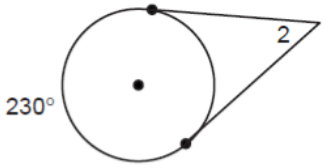

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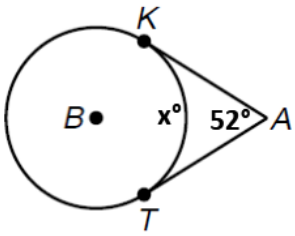

12.