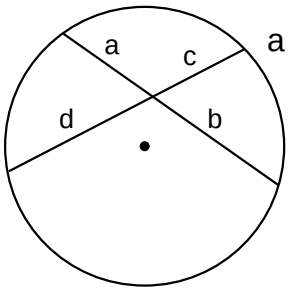
Honors Geometry
Section 10.8

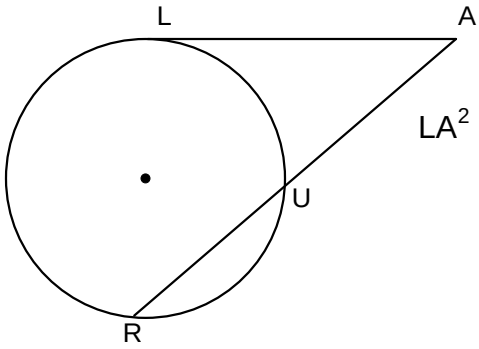
Day 1:

- Chord-Chord Power Theorem



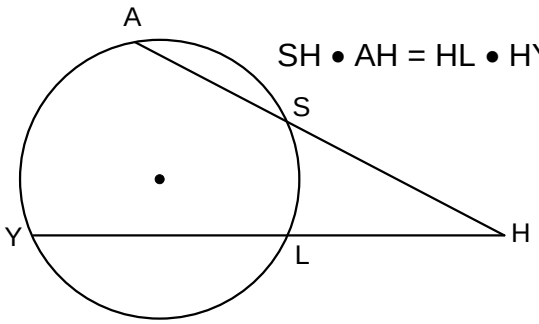
$a \bullet b = c \bullet d$

- Tangent-Secant Power Theorem

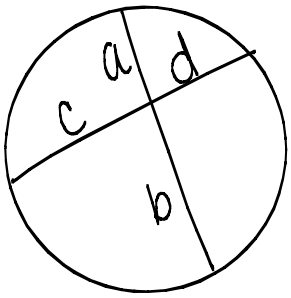


$LA^2 = AU \bullet AR$

- Secant-Secant Power Theorem

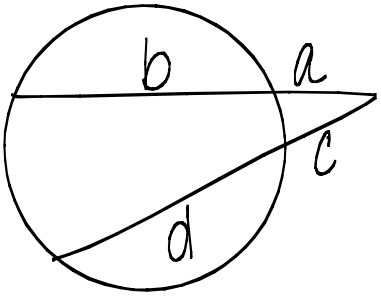


$SH \bullet AH = HL \bullet HY$



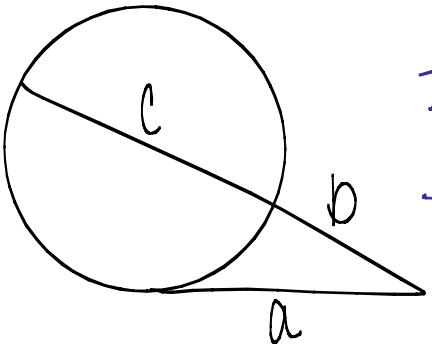
chord-chord power theorem

$$a \cdot b = c \cdot d$$



secant-secant power theorem

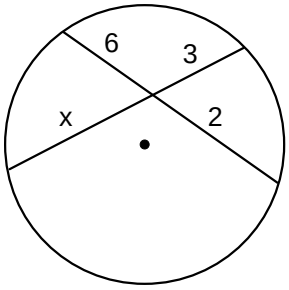
$$a(a+b) = c(c+d)$$



tangent-secant power theorem

$$a^2 = b(b+c)$$

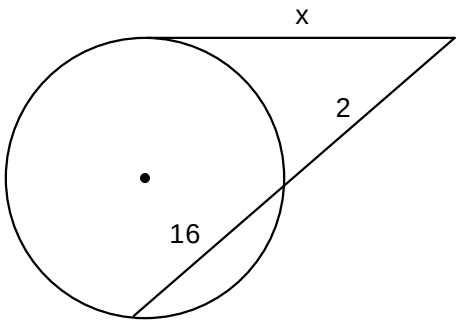
Example 1: Solve for x.



$3 \cdot x = 6 \cdot 2$

$x = 4$

Example 2: Solve for x.

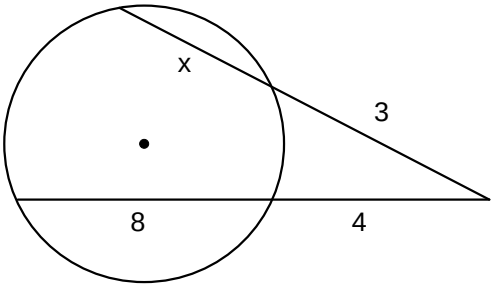


$x^2 = 2(2+16)$

$x^2 = 36$

$x = 6$

Example 3: Solve for x.



$3(3+x) = 4(4+8)$

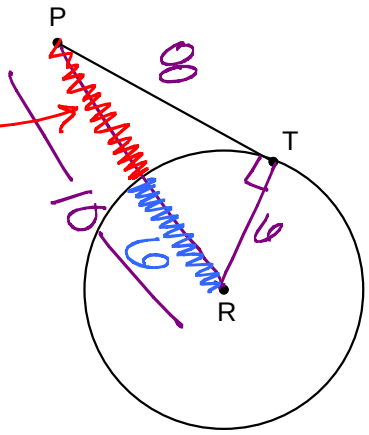
$9+3x = 48$

$3x = 39$

$x = 13$

Example 4: Tangent segment $\overline{PT}$ measures 8 cm. The radius of the circle is 6 cm. Find the distance from P to the circle.

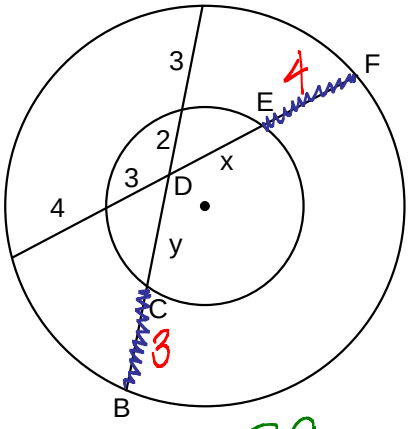
4



Honors Geometry
Notes 10.8 – Day 2

Example 1: A triangle with angles in the ratio of 5:6:7 is inscribed in a circle. At the vertices of the triangle, tangents are drawn to form a circumscribed triangle. Find the angles of the circumscribed triangle.

Example 2: Given concentric circles as shown, find DE and DC.



$X = 26$

$Y = 39$

$$\begin{cases} 2y = 3x \\ 5(y+3) = 7(x+4) \end{cases} \longrightarrow \begin{cases} -7(-3x + 2y = 0) \\ 3(-7x + 5y = 13) \end{cases}$$

$$\begin{cases} 21x - 14y = 0 \\ -21x + 15y = 39 \end{cases} \longrightarrow y = 39$$

Example 3: Find x and y.

chord-chord

$3 \cdot y = 9 \cdot x$

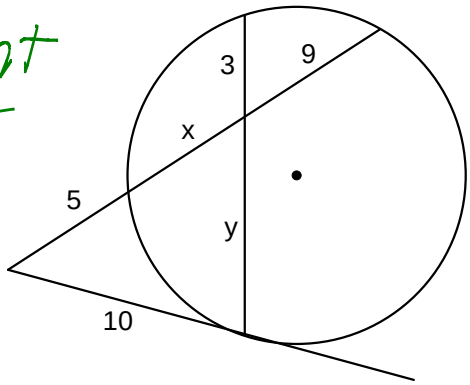
$3 \cdot y = 9 \cdot 6$

$y = 18$

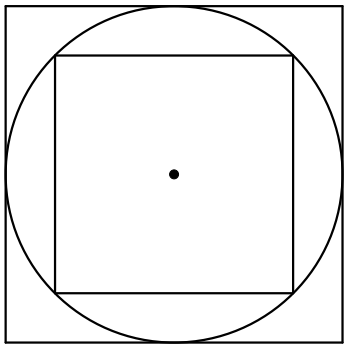
secant-tangent

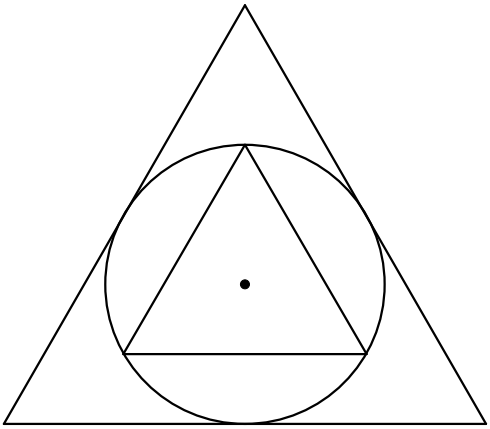
$10^2 = 5(5 + x + 9)$

$x = 6$



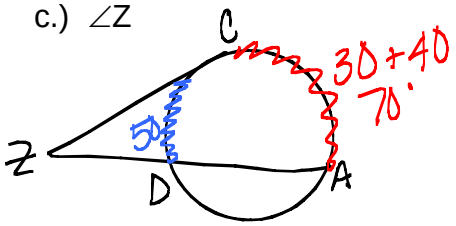
Example 4: Each circle is inscribed in a regular polygon and is circumscribed about another regular polygon. If the length of a side of each outer polygon is 12, find the length of a side of each inner polygon.





Example 5: Given: $\overset{\frown}{AB} = 30°$
$\overset{\frown}{BC} = 40°$
$\overset{\frown}{CD} = 50°$

Find: a.) $\angle X$
b.) $\angle Y$
c.) $\angle Z$



Tangent & tangent + Minor arc = 180°