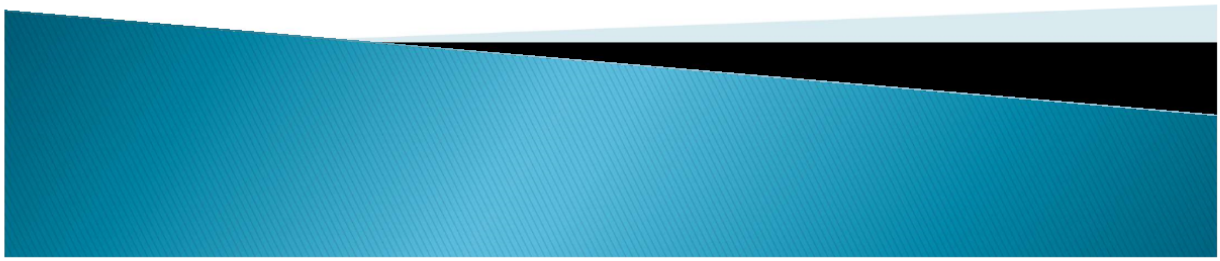
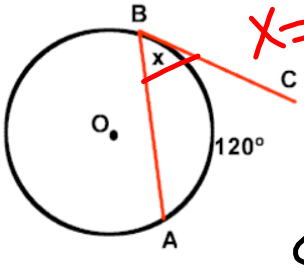
10.8: The Power Theorems



Starter

- Solve for x

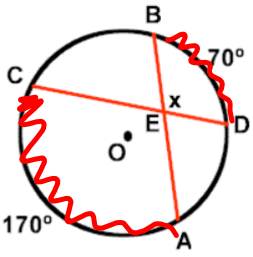
1)



x=60°

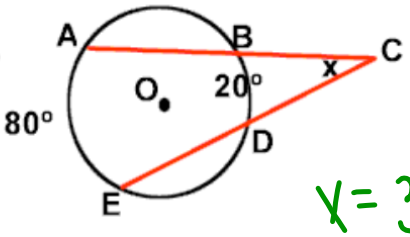
ol'schoo

2)



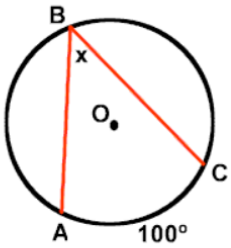
X=120°

3)



X=30°

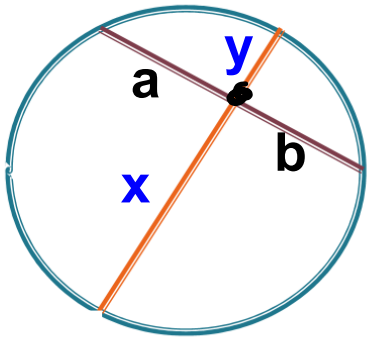
4)



X=50°

Chord-Chord Power Theorem

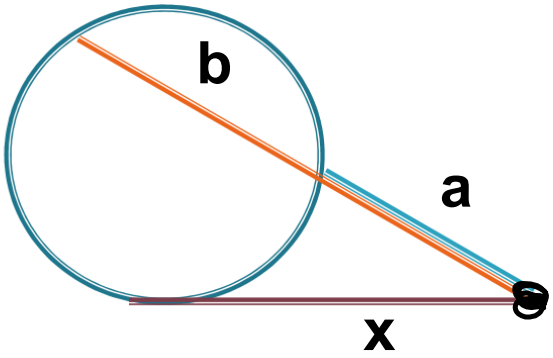
- Multiply both parts of the chord together. Then set them equal.



ab = xy

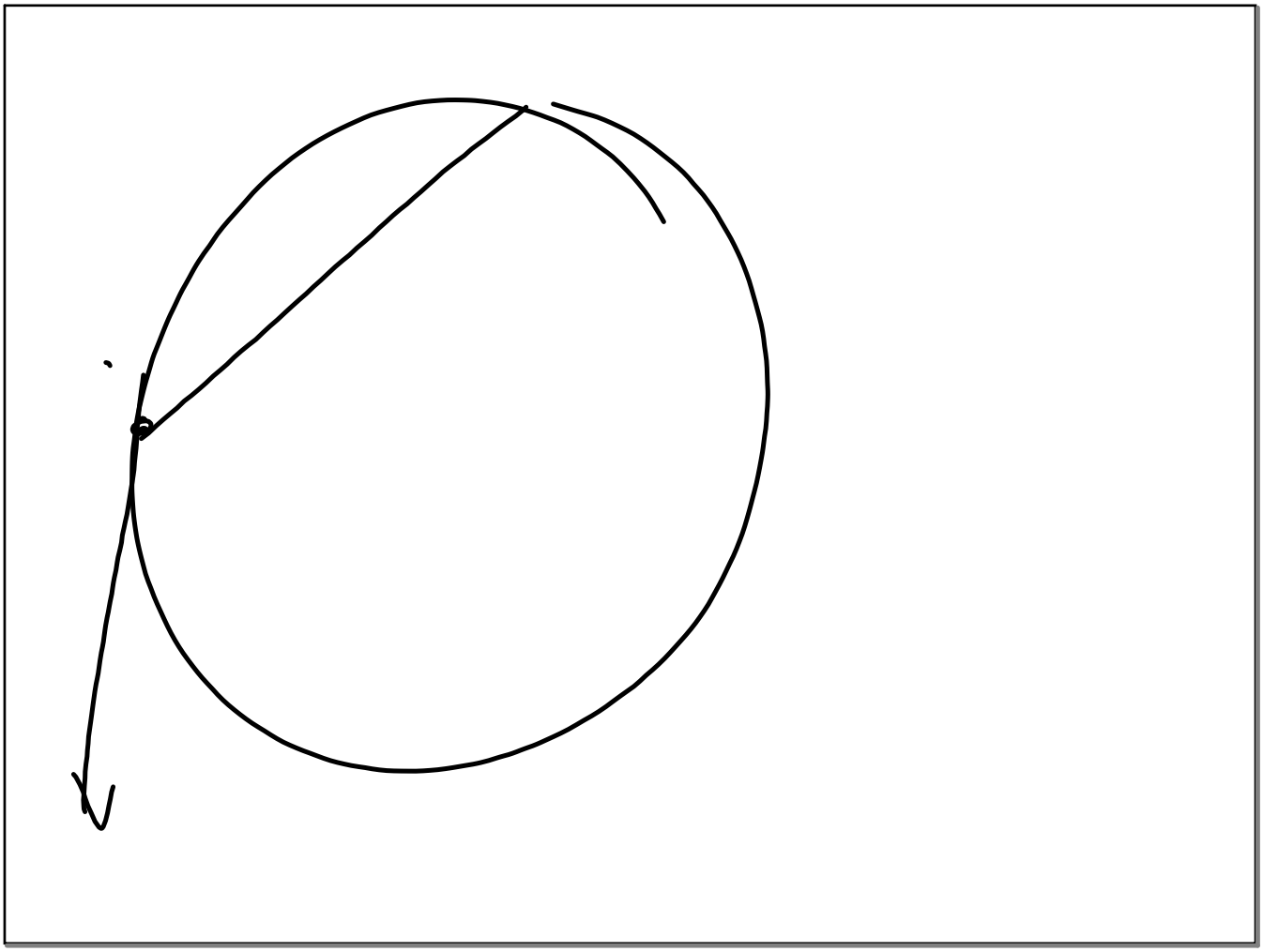
Secant-Tangent Power Theorem

- Multiply the secant by its external piece and set it equal to the square of the tangent.

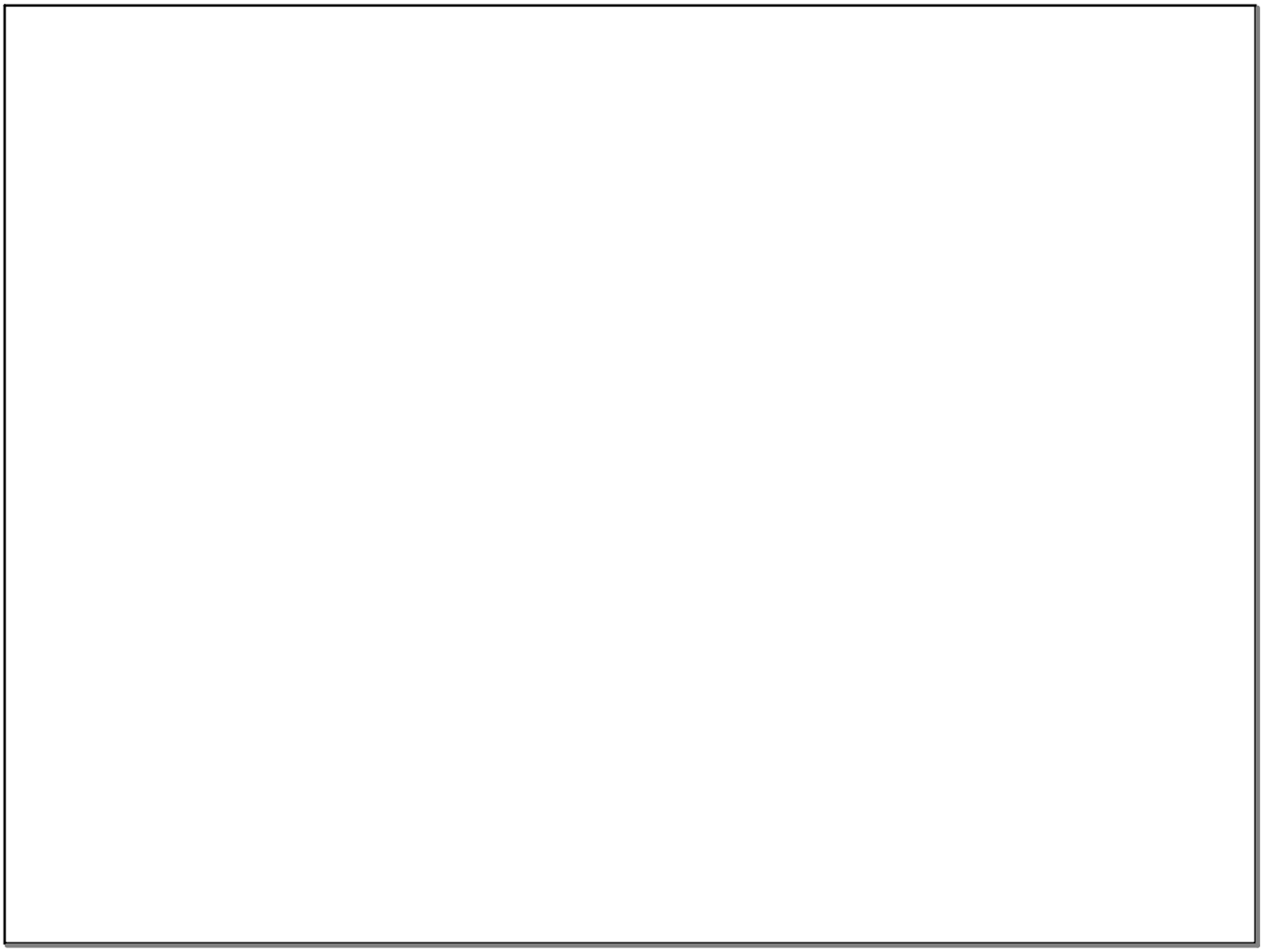


$$x^2 = a(a+b)$$

Entire Seg.



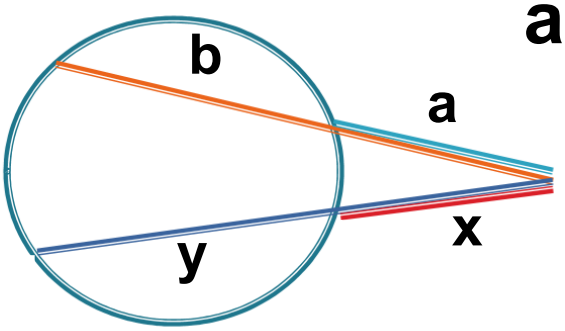
May 2-11:59 AM



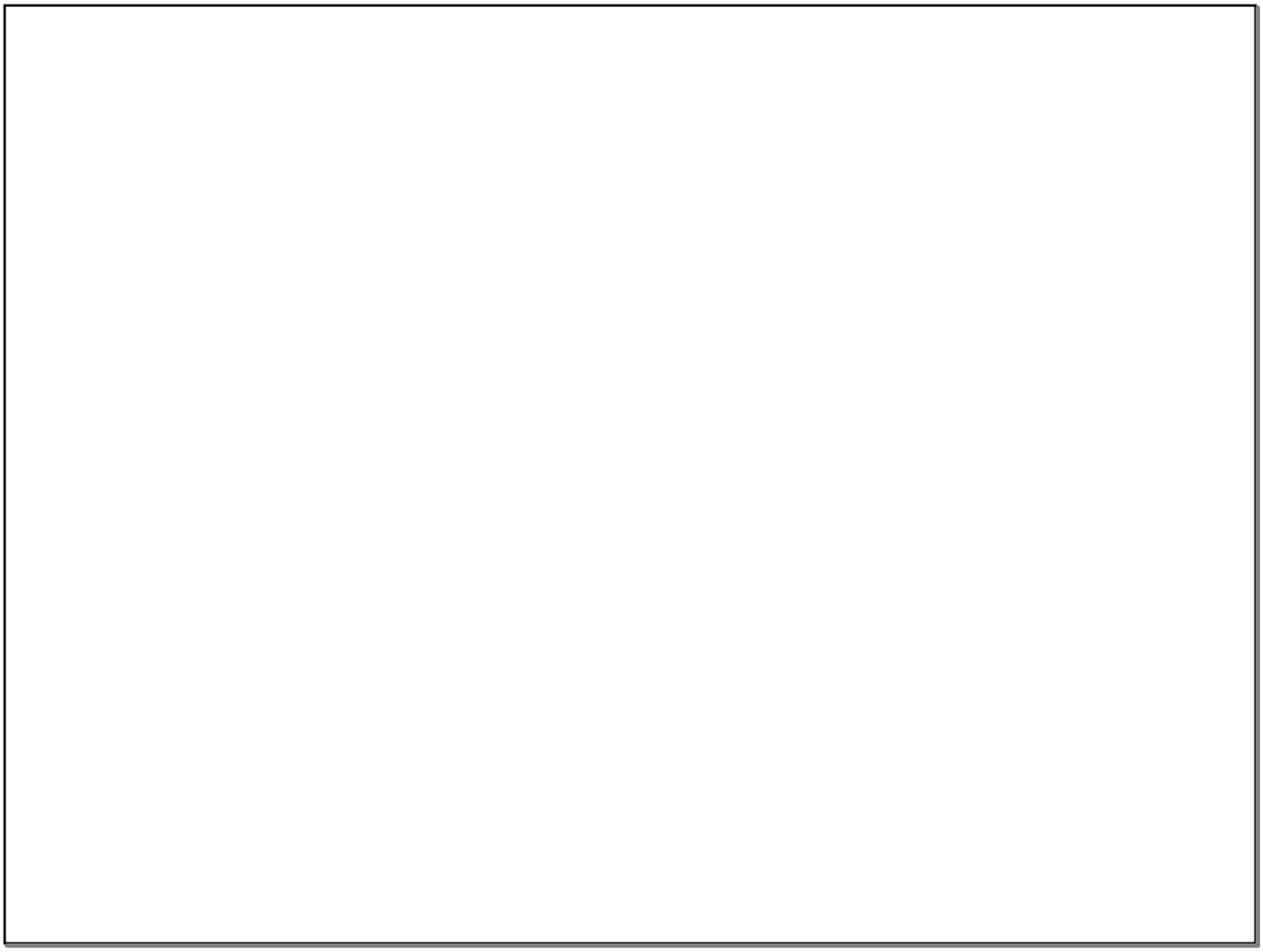
May 2-12:00 PM

Secant-Secant Power Theorem

- Used when two secants intersect
- Multiply one secant by its external part and set equal to the other secant multiplied by its external part.



$$a(a + b) = x(x + y)$$



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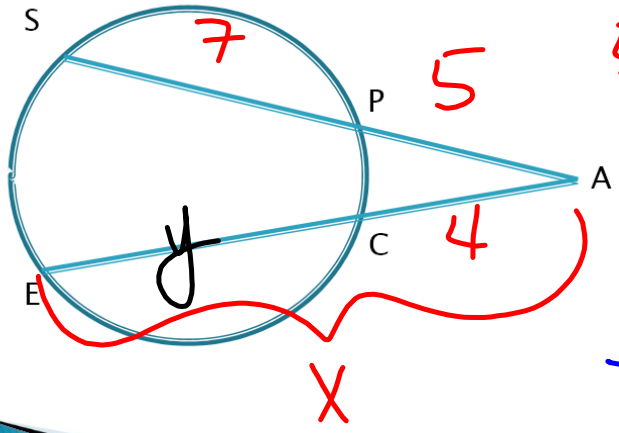
Example 1

Given: PA = 5, SP = 7, AC = 4

Find: AE = 11 + 4 = 15



$a(a+b) = x(x+y)$

$5(5+7) = 4(4+y)$

$60 = 16 + 4y$

$44 = 4y$

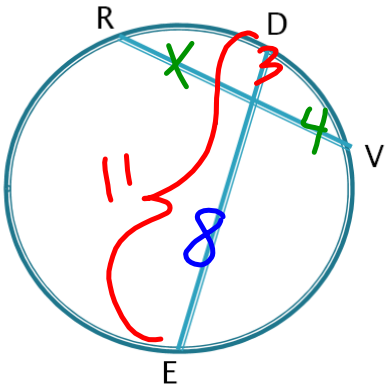
$y = 11$

$5(5+7) = 4(x)$

$x = 15$

Example 2

Given: DE = 11, ID = 3, VI = 4
Find: IR



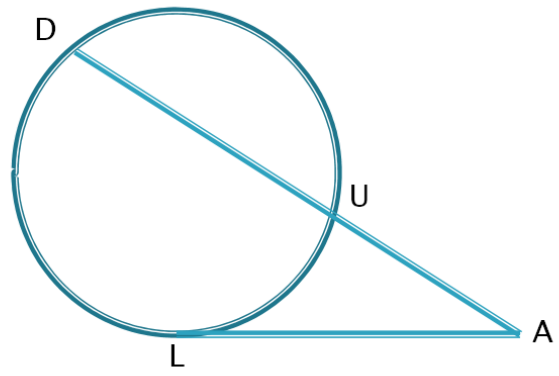
$4x = 3 \cdot 8$

$4x = 24$

$x = 6$

Example 3

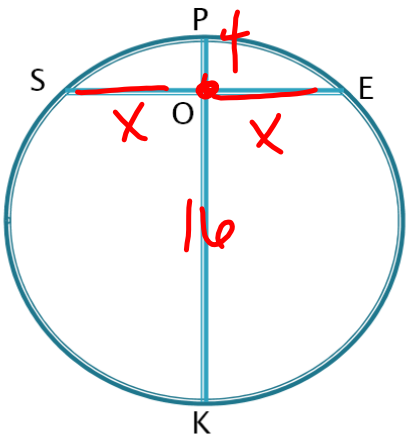
Given: UA = 3, DU = 9
Find: AL



Example 4

Given: PO = 4, OK = 16, O is the mdpt. of $\overline{SE}$

Find: SO



$4(16) = x \cdot x$

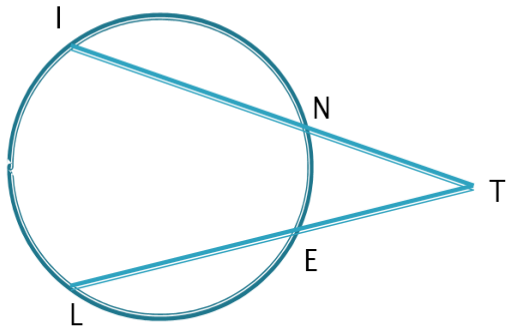
$\sqrt{64} = \sqrt{x^2}$

$8 = x$

Example 5

Given: TE = 4, TL = 10, TN = 5

Find: IN



Homework

p. 495 ~~1,2,3,4,5,9,11,16~~

1, 2, 3c, 4c, 5, 9, 11, 16