

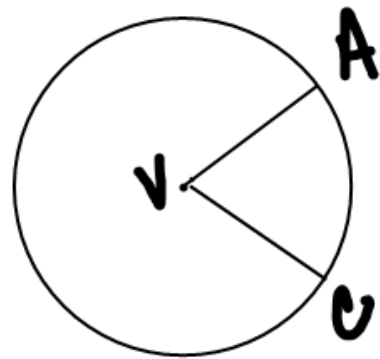
$$12.$$

$$\frac{142}{70}$$

$$\frac{1}{2}(72)$$

$$36^\circ$$

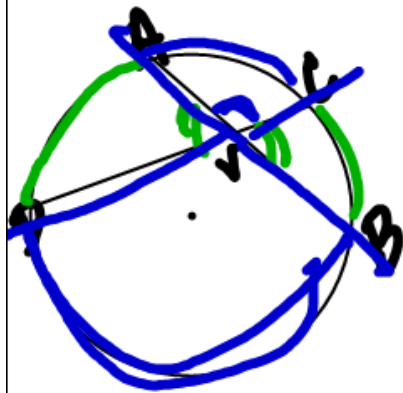
# m∠AVC



Center

Central ∠  
formed by  
2 radii

$$m\widehat{AC} = m\angle AVC$$

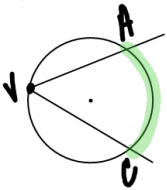


Intercept

2 chords  
or 2 secants

$$\frac{1}{2}(m\widehat{AC} + m\widehat{DB})$$

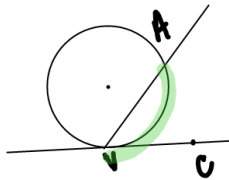
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43  
on the  
circle

Inscribed  
∠  
of secants or  
chords

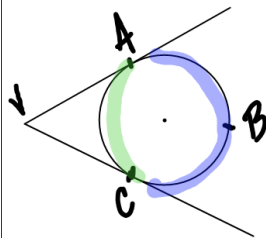
44  
 $\frac{1}{2} m \widehat{AC}$



45  
on the  
circle

46  
secant &  
tangent

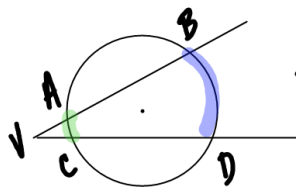
47  
 $\frac{1}{2} m \widehat{AC}$



exterior  
of circle

2 tangents

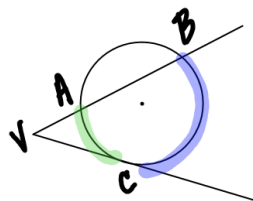
49.  $\frac{1}{2} (m \widehat{ABC} - m \widehat{AC})$



50.  
exterior  
of circle  
52.

51.  
2 secants

$\frac{1}{2} (m \widehat{BD} - m \widehat{AC})$

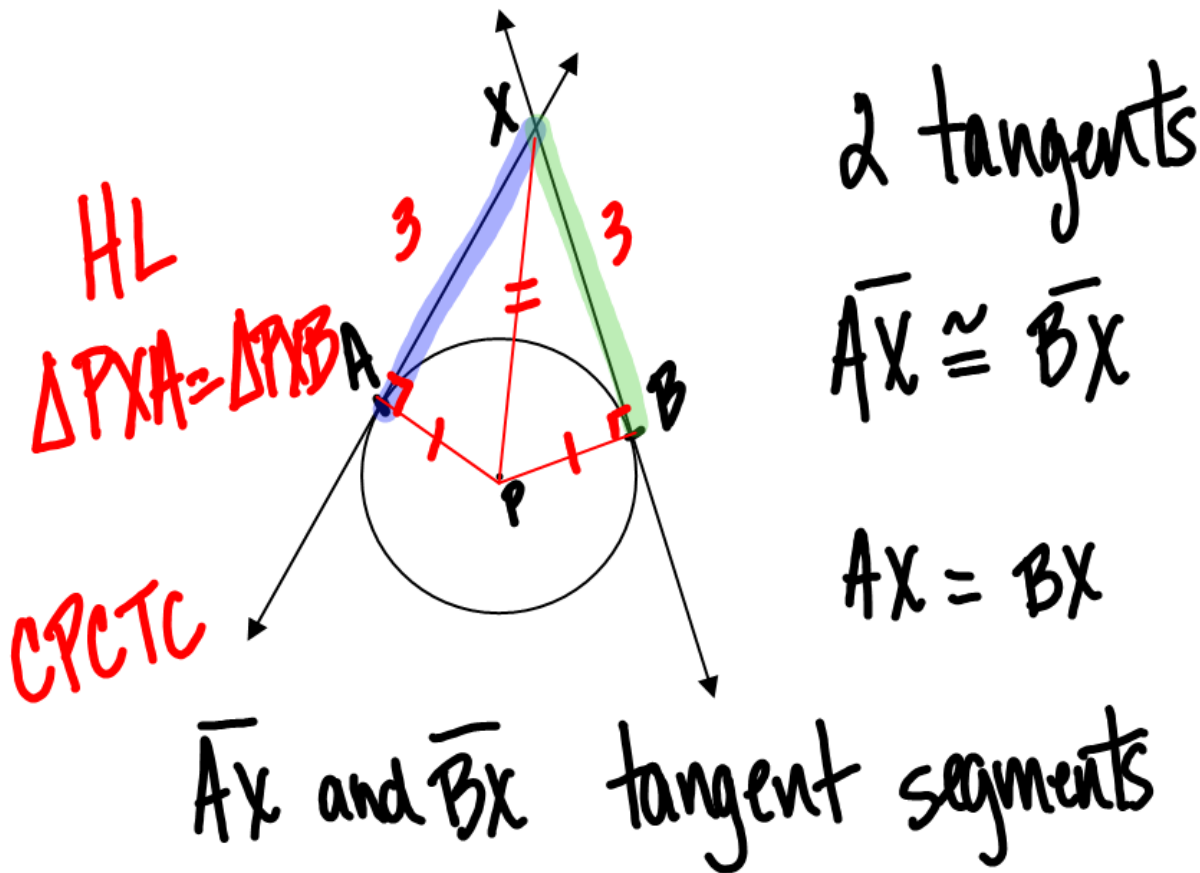


53.  
exterior  
of circle  
55.

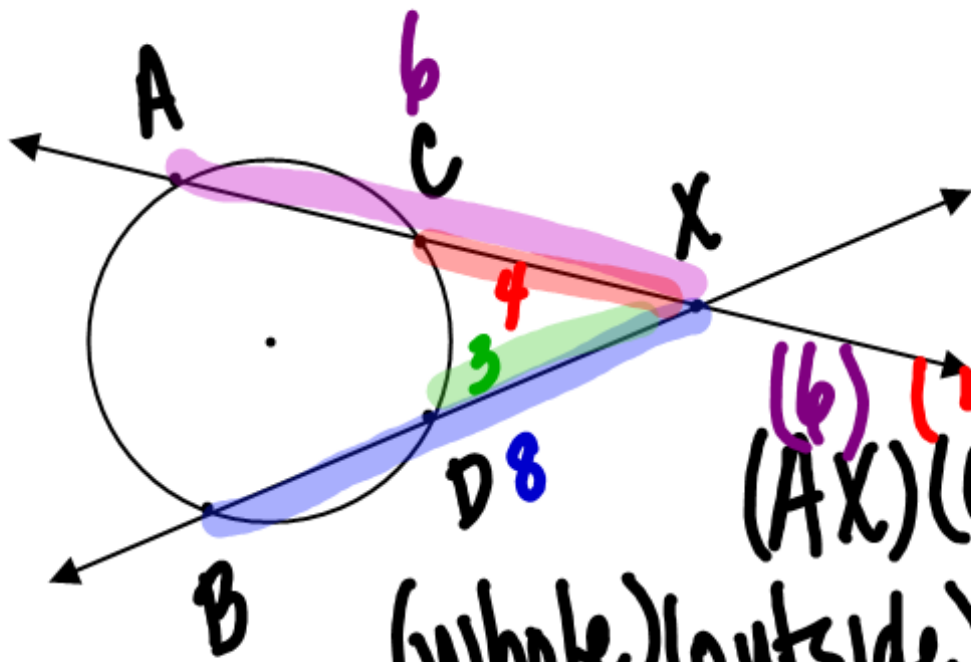
54.  
secant &  
tangent

$\frac{1}{2} (m \widehat{BC} - m \widehat{AC})$

# 9.5 Segments of Tangents Secants and Chords



# 2 secants

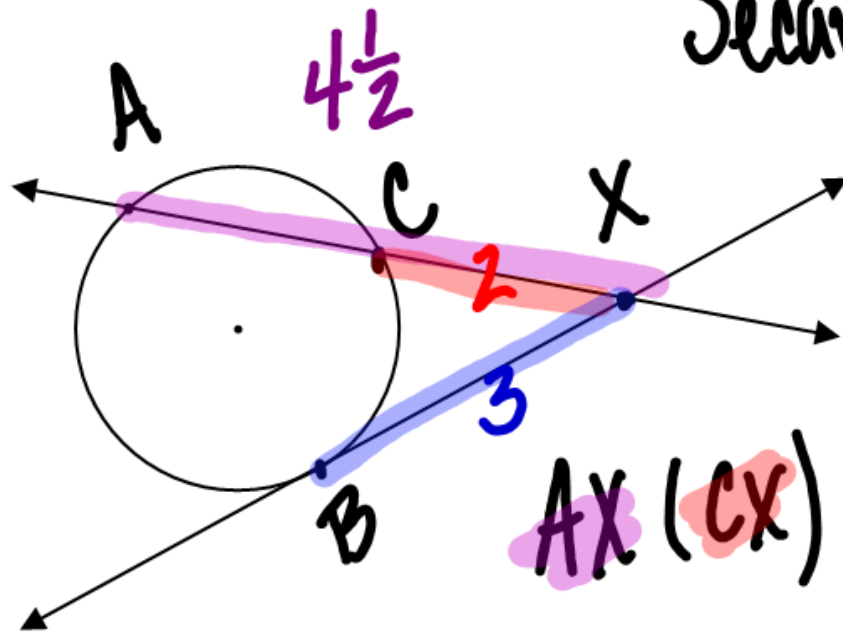


$$(AX)(CX) = (BX)(DX)$$

(whole)(outside) = (whole)(outside)

secant segment  $\overline{AX}, \overline{BX}$   
 external secant segment  $\overline{CX}, \overline{DX}$

# Secant and Tangent



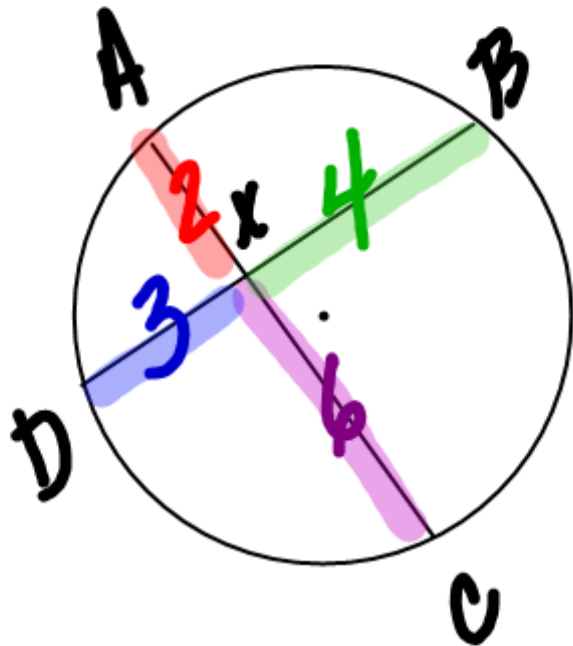
$$AX(CX) = BX(BX)$$

$$AX(CX) = (BX)^2$$

$$\text{whole (outside)} = \text{tangent}^2$$

$$(4\frac{1}{2})(2) = 3^2$$

$$9 = 9$$



2 chords or  
2 secants intersecting  
inside the circle

$$(AX)(XC) = (DX)(XB)$$

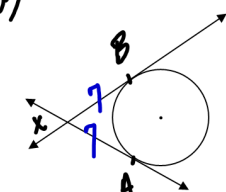
$$2(6) = 3x$$

$$12 = 3x$$

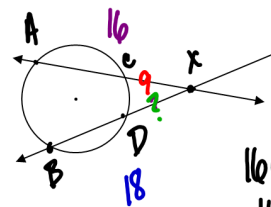
$$\frac{12}{3} = \frac{3x}{3}$$

$$4 = x$$

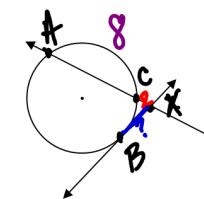
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6.  2 tangents

$BX = 7$   
 $AX = BX$

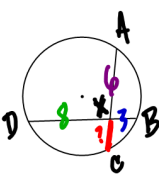
7. 

$16(9) = 18x$   
 $\frac{144}{18} = \frac{18x}{18}$   
 $8 = x$

8. 

$8(2) = x^2$   
 $\sqrt{16} = \sqrt{x^2}$   
 $4 = x$

$BX = 4$

9. 

$8(3) = 6x$   
 $\frac{24}{6} = \frac{6x}{6}$   
 $4 = x$

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30-37 A