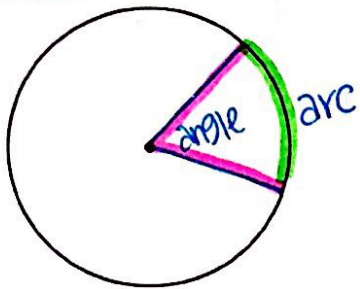


# 6.1 GUIDED NOTES: Arcs and Angles of Circles

## Central and Inscribed Angles

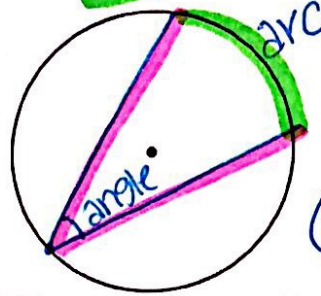
central angle: angle with its vertex on the center of the circle  
angle = arc



$$\frac{1}{2} = .5$$

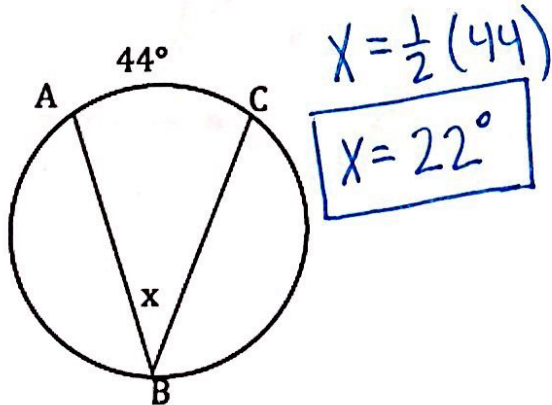
inscribed angle: angle with its vertex on the circle.

angle =  $\frac{1}{2}$  · arc  
arc = 2 · angle

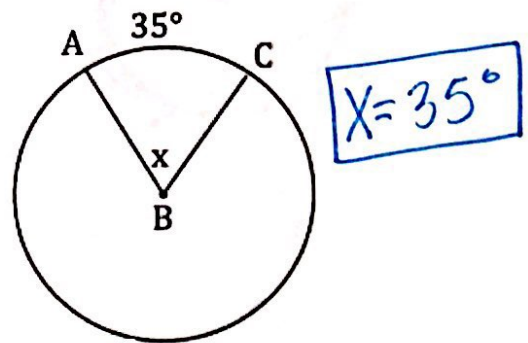


\* arc is always bigger than angle

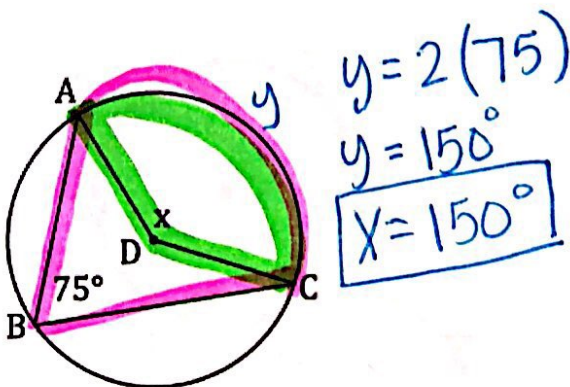
EX1



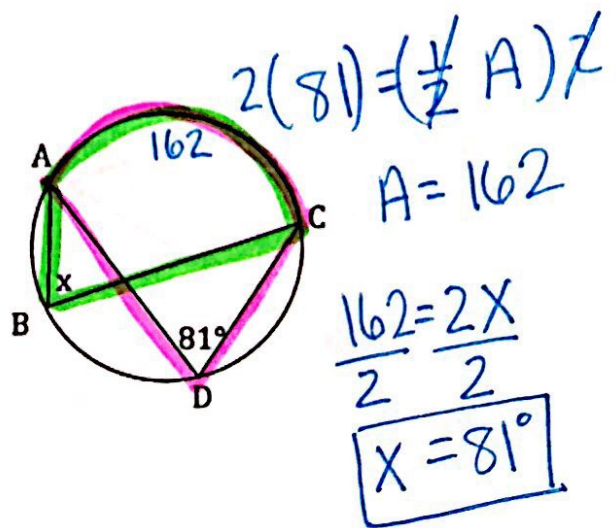
EX2



EX3



EX4



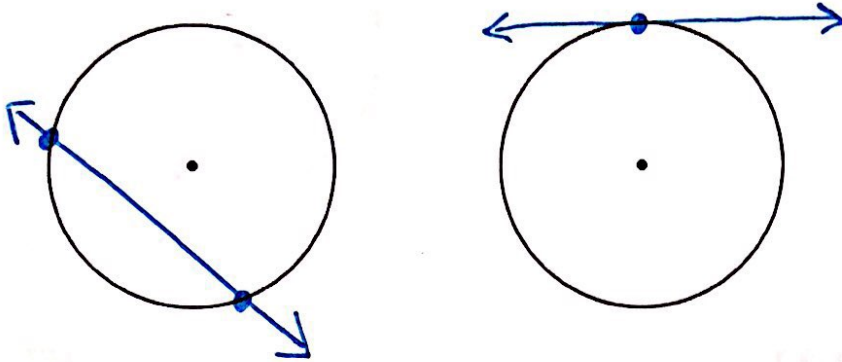
# Angles Formed By Secants and Tangents

secant: a line that intersects a circle at 2 points

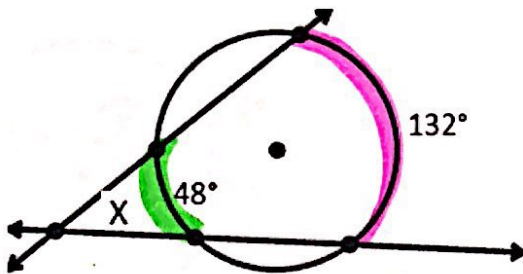
tangent: a line that intersects a circle at 1 point

FORMULA:

$$\text{angle} = \frac{1}{2} (\text{big arc} - \text{little arc})$$



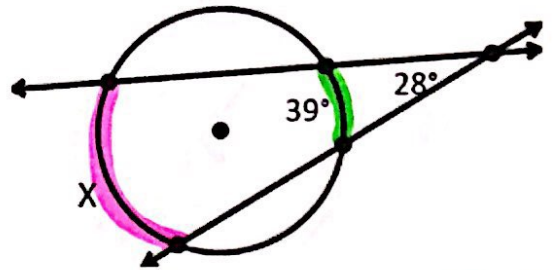
EX5



$$X = \frac{1}{2} (132 - 48)$$

$$X = 42^\circ$$

EX6



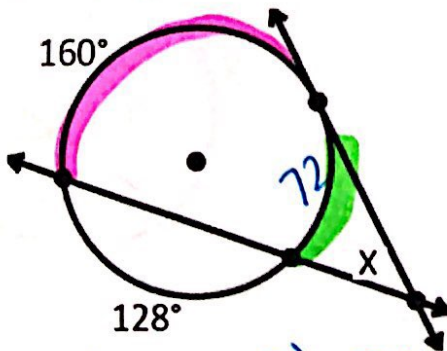
$$2(28) = \left[ \frac{1}{2} (X - 39) \right] 2$$

$$56 = X - 39$$

$$+39 \quad +39$$

$$X = 95^\circ$$

EX7

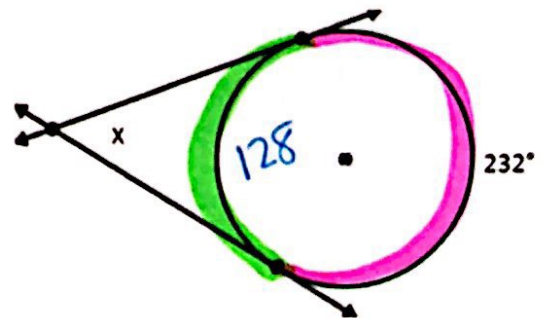


$$360 - (160 + 128) = 72$$

$$X = \frac{1}{2} (160 - 72)$$

$$X = 44^\circ$$

EX8



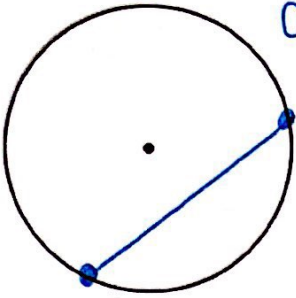
$$360 - 232 = 128$$

$$X = \frac{1}{2} (232 - 128)$$

$$X = 52^\circ$$

## Angles Formed By Chords

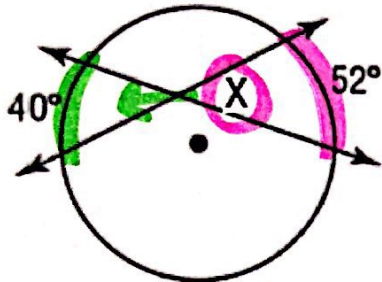
chord: a line segment with endpoints on the circle



**FORMULA:**

$$\text{angle} = \frac{1}{2} \left( \frac{\text{it's arc}}{\text{arc}} + \frac{\text{other arc}}{\text{arc}} \right)$$

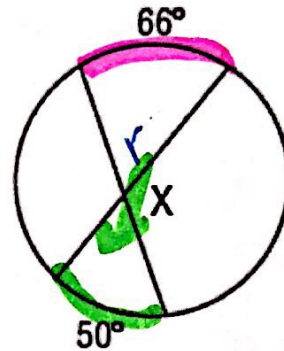
EX9



$$X = \frac{1}{2} (52 + 40)$$

$$\boxed{X = 46^\circ}$$

EX10



$$r = \frac{1}{2} (66 + 50)$$

$$r = 58^\circ$$

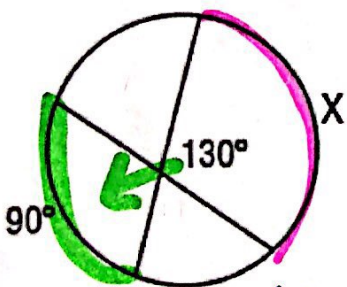
$$58 + X = 180$$

$$-58$$

$$-58$$

$$\boxed{X = 122^\circ}$$

EX11



$$2(130) = \left[ \frac{1}{2} (X + 90) \right] 2$$

$$260 = X + 90$$

$$-90$$

$$-90$$

$$\boxed{X = 170^\circ}$$