

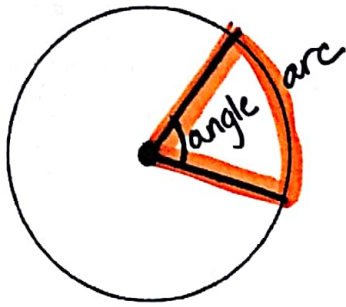
November 7

GUIDED NOTES: Arcs and Angles of Circles

Central and Inscribed Angles

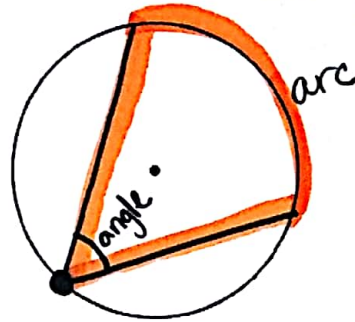
central angle: angle with its vertex on the center of the circle

angle = arc



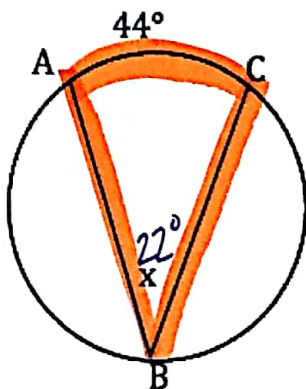
inscribed angle: angle with its vertex on the circle

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



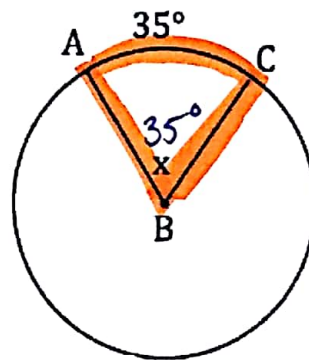
* arc is always bigger

EX1



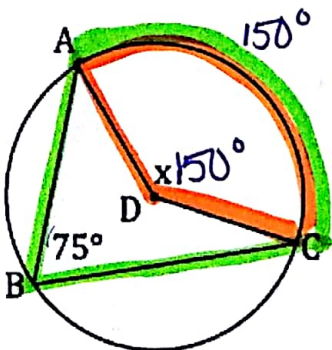
inscribed
 $x = \frac{1}{2} \cdot 44$
 $x = 22^\circ$

EX2



central
 $x = 35^\circ$

EX3

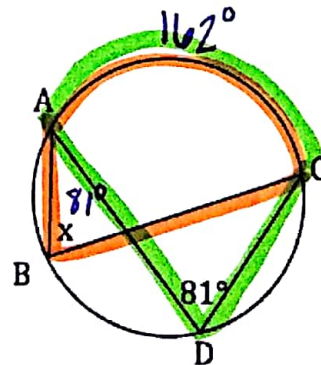


green \Rightarrow inscribed
arc = $2 \cdot 75$
arc = 150°
green arc and orange arc are the same.

orange \Rightarrow central

$x = 150^\circ$

EX4



green \Rightarrow inscribed
arc = $2 \cdot 81$
arc = 162°
green arc and orange arc are the same.

orange \Rightarrow inscribed

$x = \frac{1}{2} \cdot 162$

$x = 81^\circ$

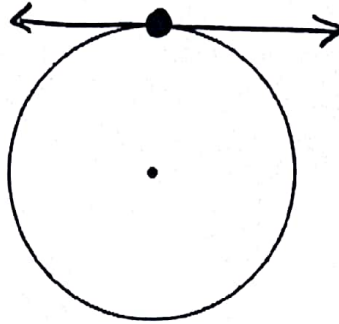
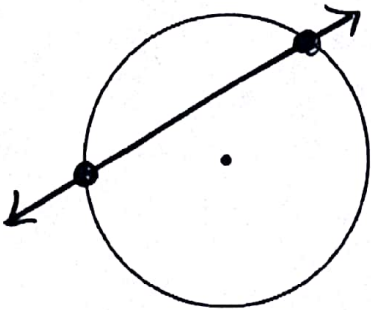
Angles Formed By Secants and Tangents

secant: a line that intersects a circle at 2 points

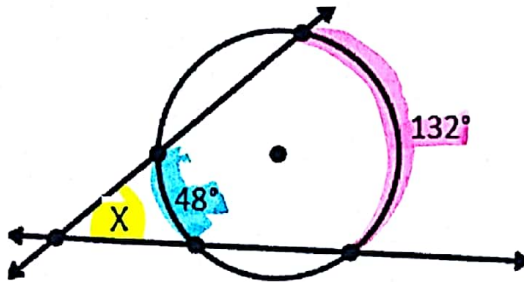
tangent: a line that intersects a circle at 1 point

FORMULA:

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



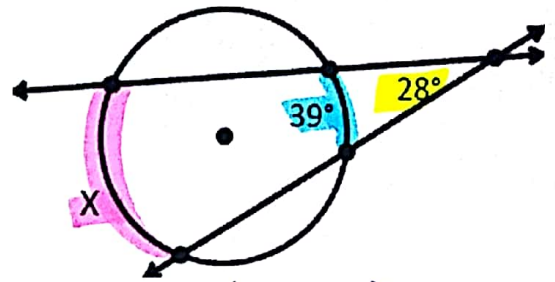
EX5



$$x = \frac{132 - 48}{2}$$

$$x = 42^\circ$$

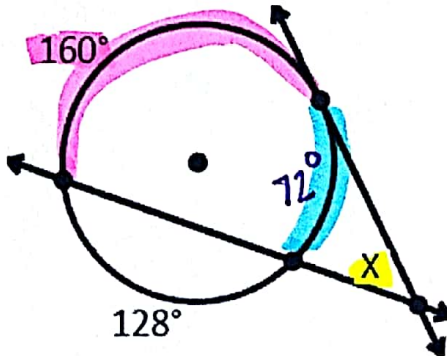
EX6



$$2 \cdot 28 = \frac{(x - 39)}{2} \cdot 2$$

$$\begin{array}{r} 56 = x - 39 \\ +39 \quad +39 \\ \hline 95 = x \end{array}$$

EX7

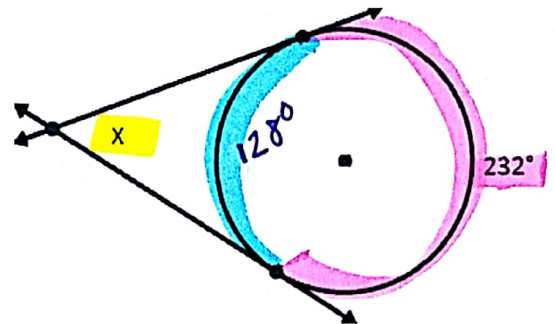


$$360 - 160 - 128 = 72^\circ$$

$$x = \frac{160 - 72}{2}$$

$$x = 44^\circ$$

EX8



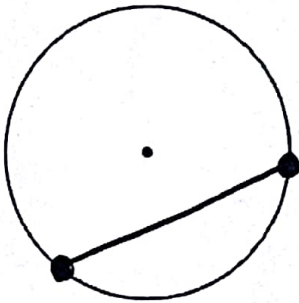
$$360 - 232 = 128^\circ$$

$$x = \frac{232 - 128}{2}$$

$$x = 52^\circ$$

Angles Formed By Chords

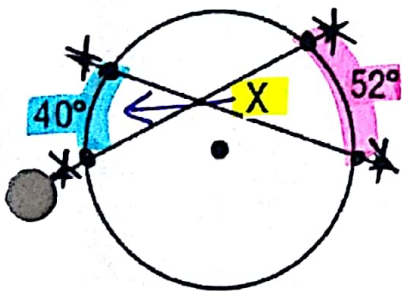
chord: a line with endpoints on the circle



FORMULA:

$$\text{angle} = \frac{\text{its arc} + \text{other arc}}{2}$$

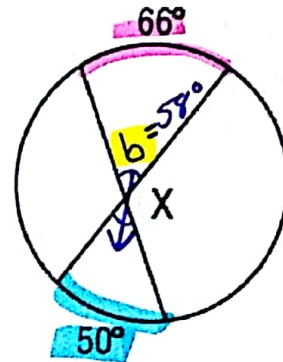
EX9



$$x = \frac{52 + 40}{2}$$

$$x = 46^\circ$$

EX10

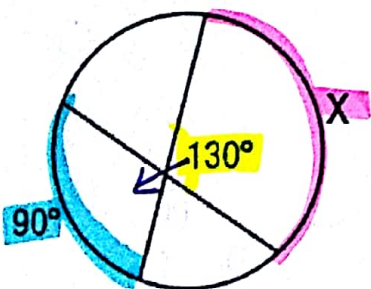


$$b = \frac{66 + 50}{2}$$

$$b = 58^\circ$$

$$180 - 58 = 122^\circ = x$$

EX11



$$2 \cdot 130 = \frac{x + 90}{2} \cdot 2$$

$$260 = x + 90$$

$$\begin{array}{r} 260 = x + 90 \\ -90 \quad -90 \\ \hline 170^\circ = x \end{array}$$