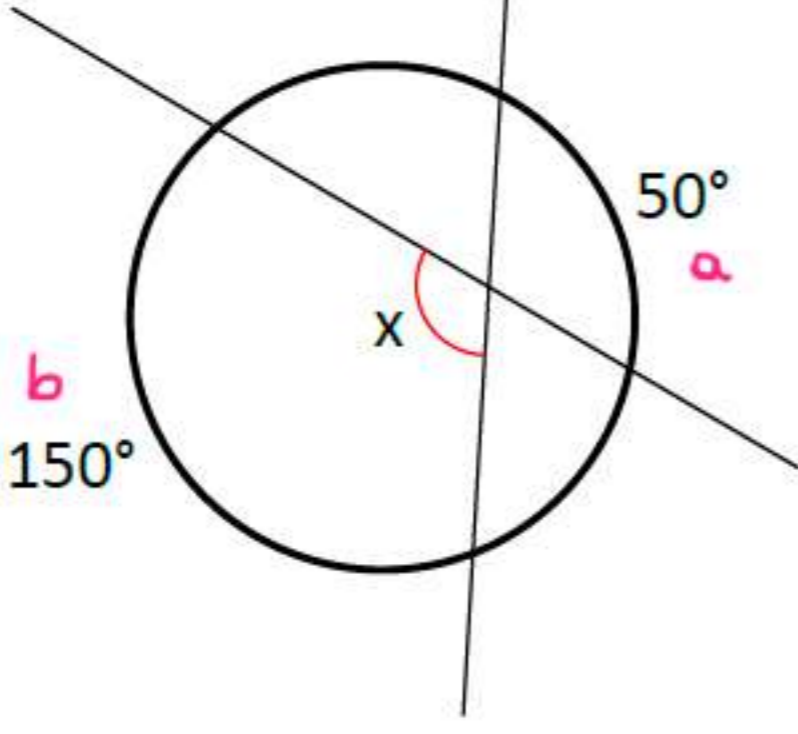


Determine o valor do ângulo x em cada caso:

1.



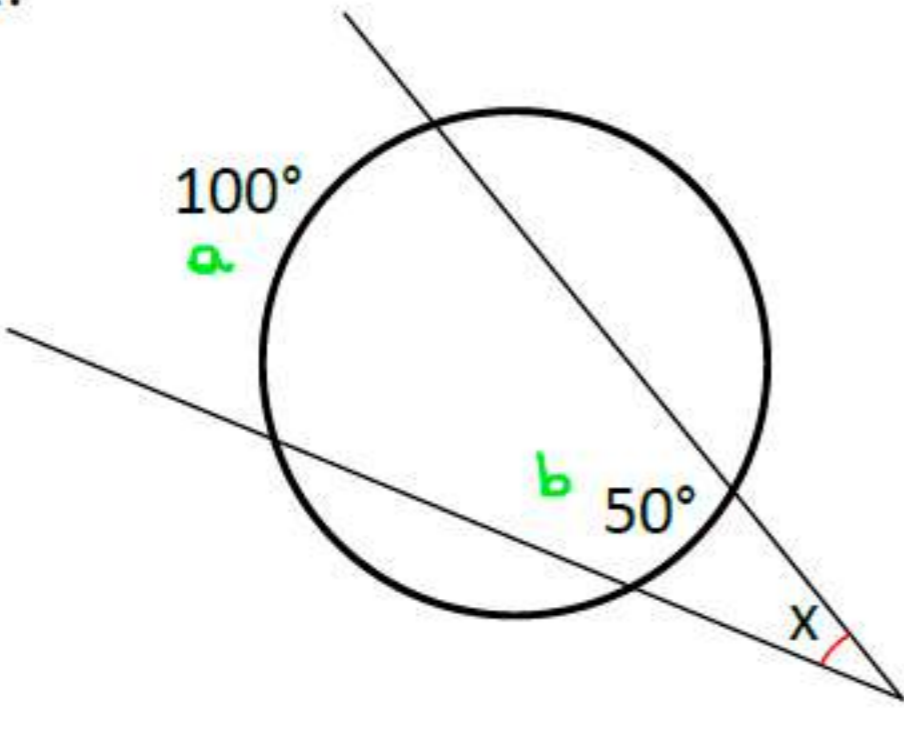
x = ângulo excêntrico interno

$$x = \frac{b+a}{2}$$

$$x = \frac{150^\circ + 50^\circ}{2}$$

$$x = 100^\circ$$

2.



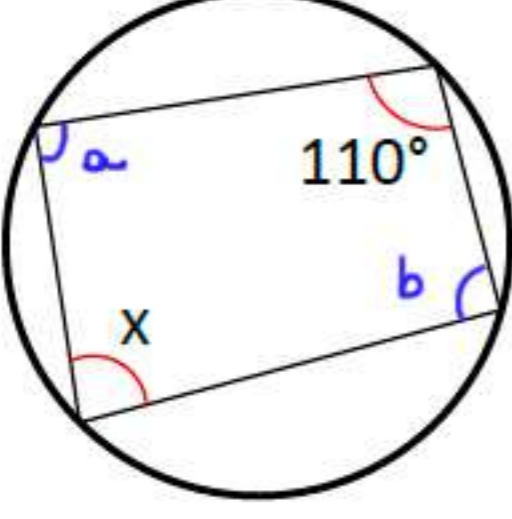
x = ângulo excêntrico externo

$$x = \frac{b-a}{2}$$

$$x = \frac{100^\circ - 50^\circ}{2}$$

$$x = 25^\circ$$

3.



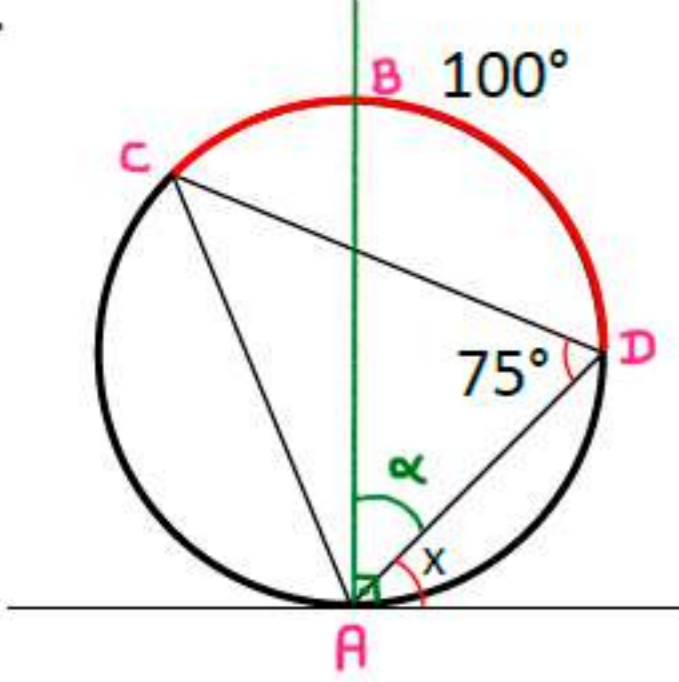
x e 110° são ângulos suplementares

$$a + b = 180^\circ \quad e \quad x + 110^\circ = 180^\circ$$

$$x = 180^\circ - 110^\circ$$

$$x = 70^\circ$$

4.



$$\alpha + x = 90^\circ$$

$$\widehat{AB} = 180^\circ$$

$$\widehat{CD} = 100^\circ$$

$$\frac{\widehat{CA} + 0^\circ}{2} = 75^\circ \quad \rightarrow \quad \widehat{CA} = 150^\circ$$

$$\widehat{CD} + \widehat{CA} + \widehat{AD} = 360^\circ$$

$$100^\circ + 150^\circ + \widehat{AD} = 360^\circ \quad \rightarrow \quad \widehat{AD} = 110^\circ$$

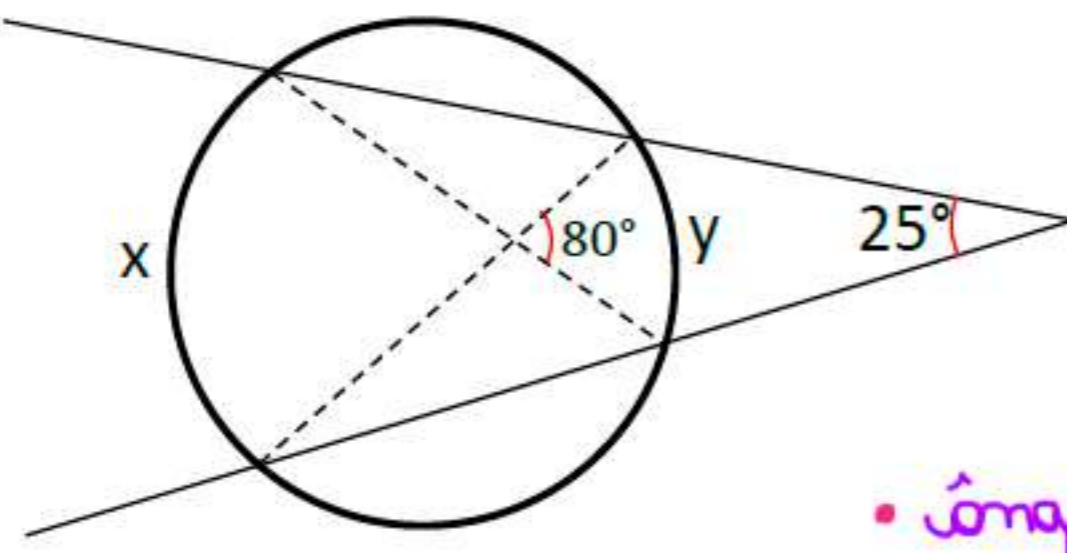
$$\widehat{AD} + \widehat{DB} = 180^\circ$$

$$110^\circ + \widehat{DB} = 180^\circ \quad \rightarrow \quad \widehat{DB} = 70^\circ$$

$$\frac{\widehat{DB} + 0^\circ}{2} = \alpha \quad \rightarrow \quad \frac{70^\circ + 0^\circ}{2} = \alpha \quad \rightarrow \quad \alpha = 35^\circ$$

$$\alpha + x = 90^\circ \quad \rightarrow \quad x = 90 - 35^\circ \quad \rightarrow \quad x = 55^\circ$$

5. Determine as medidas x e y.



• ângulo excêntrico interno

$$\frac{x+y}{2} = 80^\circ \quad \rightarrow \quad x+y = 160^\circ$$

• ângulo excêntrico externo

$$\frac{x-y}{2} = 25^\circ \quad \rightarrow \quad x-y = 50^\circ$$

$$+ \begin{cases} x+y = 160^\circ \\ x-y = 50^\circ \\ \hline 2x+0y = 210^\circ \end{cases}$$

$$2x = 210^\circ$$

$$x = \frac{210^\circ}{2}$$

$$x = 105^\circ$$

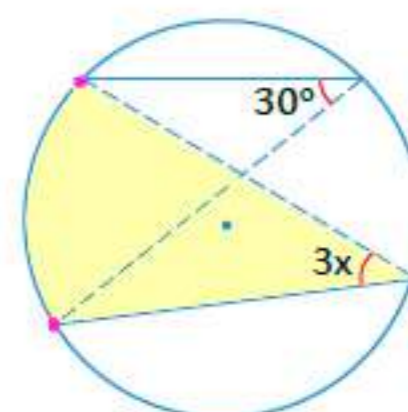
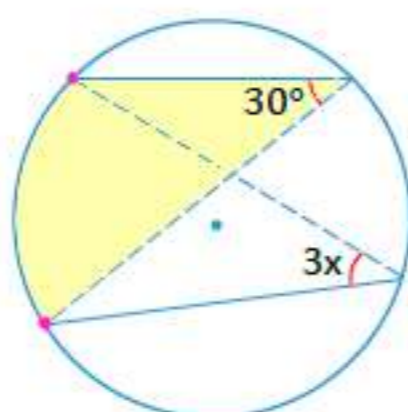
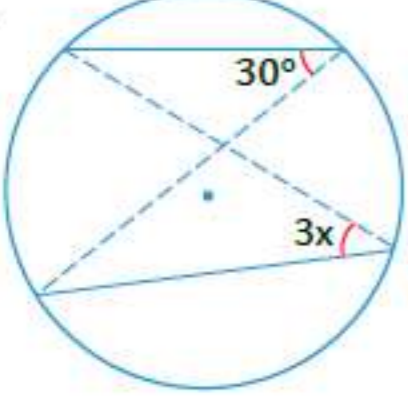
$$x+y = 160^\circ$$

$$105^\circ + y = 160^\circ$$

$$y = 160^\circ - 105^\circ$$

$$y = 55^\circ$$

6.



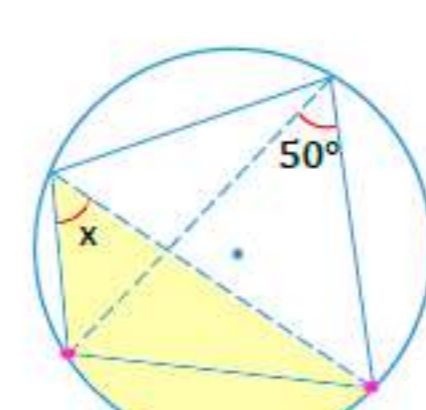
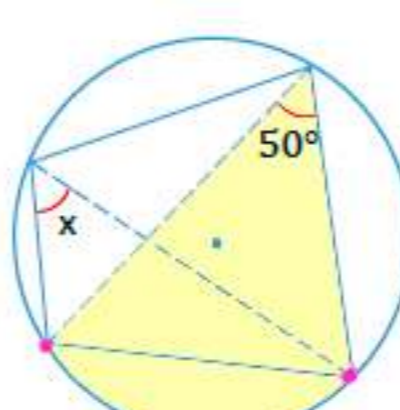
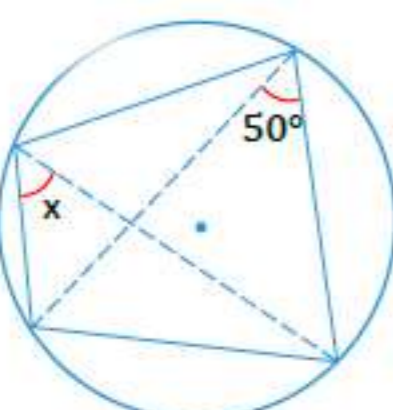
OBS: como os ângulos 3x e 30° estão 'enxergando' o mesmo arco, então eles possuem a mesma medida em graus!

$$3x = 30^\circ$$

$$x = \frac{30^\circ}{3} = 10^\circ$$

$$10^\circ$$

7.



$$x = 50^\circ$$

$$50^\circ$$