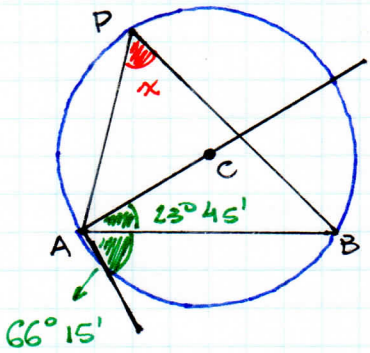
• ARCOS E ÂNGULOS NA CIRCUNFERÊNCIA

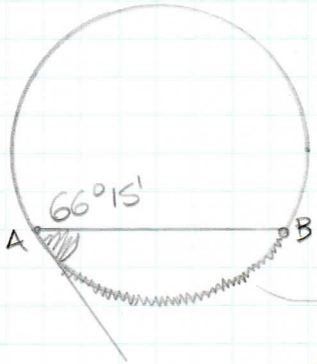
1. (FATEC) - NA FIGURA ABAIXO, O TRIÂNGULO APB ESTÁ INSCRITO NA CIRCUNFERÊNCIA DE CENTRO C.
SE OS ÂNGULOS ASSINALADOS TEM AS MEDIDAS INDICADAS, ENTÃO x É IGUAL A:

A: 23°45' B: 30° C: 60° D: 62°30' (E): 66°15'



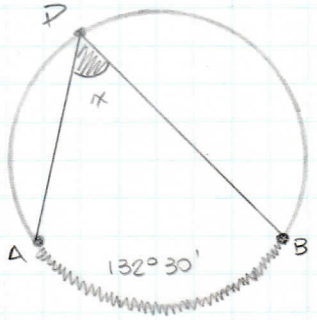
SOLUÇÃO: (em 2 passos)

1: ÂNGULO DE SEGMENTO



- $x = \frac{\overset{\frown}{AB}}{2}$
- $66°15' = \frac{\overset{\frown}{AB}}{2} \rightsquigarrow 66°15' \times 2 = \overset{\frown}{AB}$
- $\boxed{\overset{\frown}{AB} = 132°30'}$

2: ÂNGULO INSCRITO

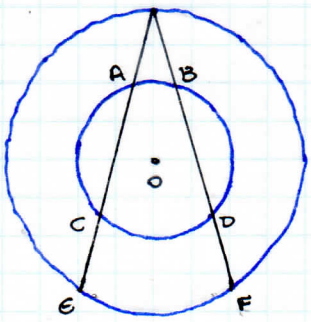


- $x = \frac{\alpha}{2}$; $\alpha = 132°30'$
- $x = \frac{132°30'}{2}$
- $\boxed{x = 66°15'}$ //

E //

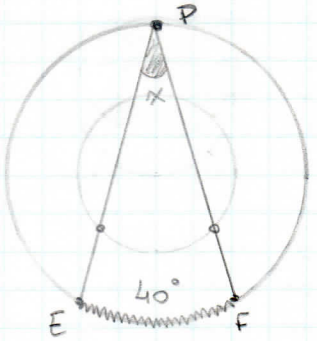
2. (MACK) - NA FIGURA, AS CIRCUNFERÊNCIAS TEM O MESMO CENTRO O E OS MENORES ARCOS AB e EF SÃO TAIS QUE $\overset{\frown}{AB} = \overset{\frown}{EF} = 40°$. A MEDIDA DO MENOR ARCO $\overset{\frown}{CD}$ É:

A: 50° B: 70° C: 65° D: 60° (E): 80°



SOLUÇÃO (em 2 passos):

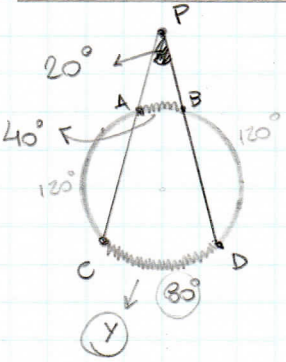
1: ÂNGULO INSCRITO



$x = \frac{\overset{\frown}{EF}}{2}$

$x = \frac{40°}{2} \rightsquigarrow \boxed{x = 20°}$

2: ÂNGULO EXCÊNTRICO EXTERIOR



$x = \frac{\overset{\frown}{CD} - \overset{\frown}{AB}}{2} \leftarrow \times 2$; $x = 20°$, $\overset{\frown}{AB} = 40°$

$40° = y - 40°$

$40° + 40° = y$

$y = 80°$ //

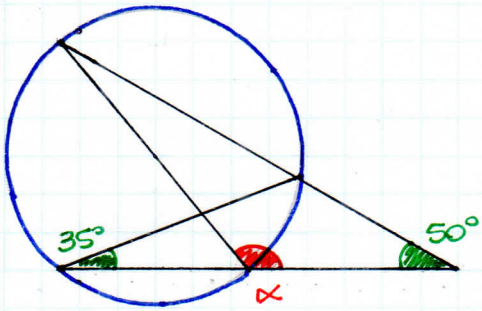
$\boxed{\overset{\frown}{CD} = 80°}$ //

E //

• ARCOS E ÂNGULOS NA CIRCUNFERÊNCIA

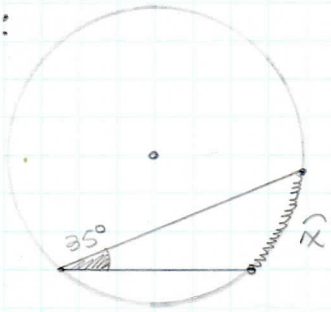
3. (UNIMEP) - NA FIGURA, O ÂNGULO α É IGUAL A:

(A) 95° B: 120° C: 115° D: 85° E: 105°



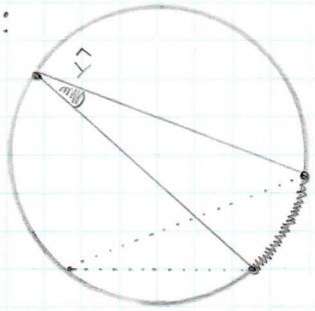
SOLUÇÃO (em 3 passos):

1:



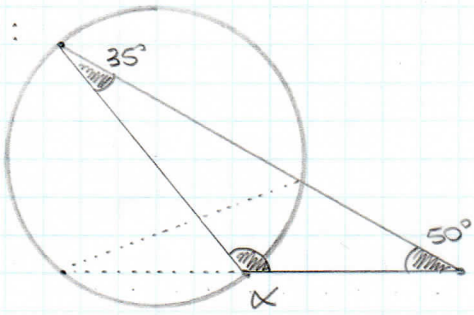
* $35° = \frac{\hat{x}}{2}$
* $\boxed{\hat{x} = 70°}$

2:



* $\hat{y} = \frac{70°}{2}$
* $\boxed{\hat{y} = 35°}$

3:

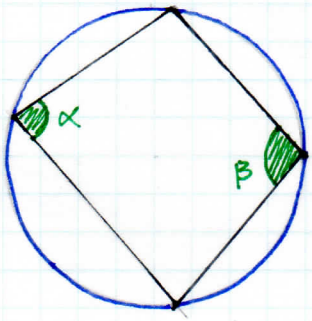


* $\alpha + 35° + 50° = 180°$
* $\alpha = 180° - 50° - 35°$
* $\boxed{\alpha = 95°}$

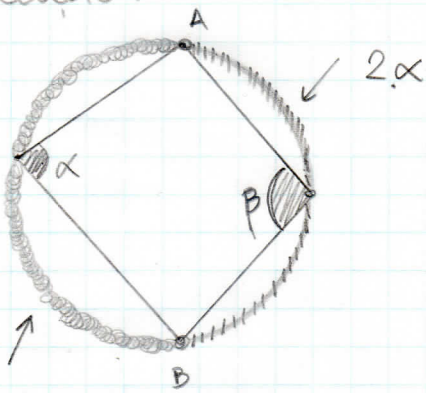
A

4. (CESGRANRIO) - UM QUADRILÁTERO ESTÁ INSCRITO EM UM CÍRCULO. A SOMA, EM RADIANOS, DOS ÂNGULOS α E β DA FIGURA É:

A: $\pi/4$ B: $\pi/2$ (C) π D: $3\pi/2$ E: 2π



SOLUÇÃO:



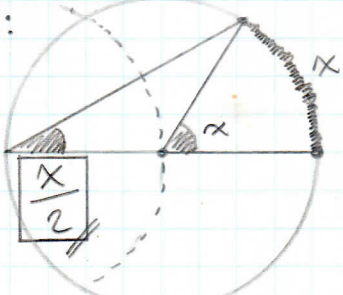
* $360° = 2\pi$ rad
* $\underbrace{2\alpha + 2\beta}_{\text{FATOR comum} = 2} = 2\pi$
* $2 \cdot (\alpha + \beta) = 2\pi$
* $\boxed{\alpha + \beta = \pi}$

C

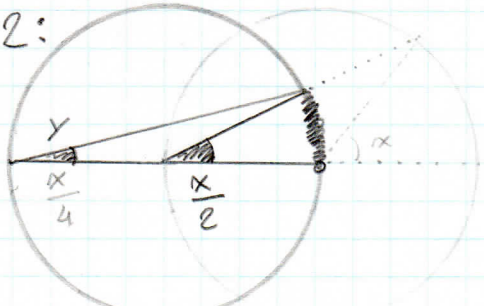
5. (UNICAMP ♡) - CALCULE A MEDIDA ANGULAR y EM FUNÇÃO DE x.

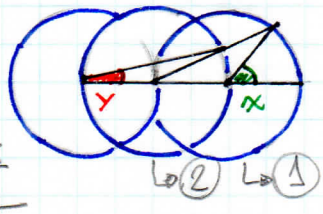
SOLUÇÃO: (em 2 passos)

1:



2:





* $y = \frac{\frac{x}{2}}{2_{/1}}$
* $y = \frac{x}{2} \cdot \frac{1}{2} \rightsquigarrow \boxed{y = \frac{x}{4}}$

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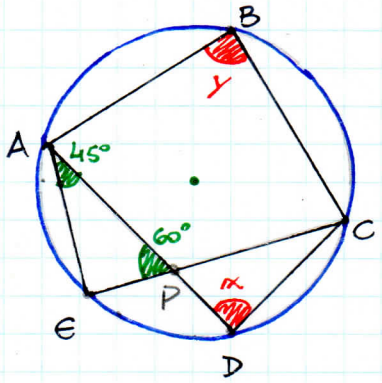
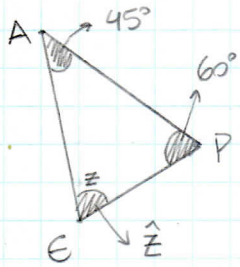
6. (MAUÁ) – NA FIGURA, CALCULE OS ÂNGULOS x E y QUE ESTÃO INSCRITOS NA CIRCUNFERÊNCIA.



SOLUÇÃO: (em 3 passos)

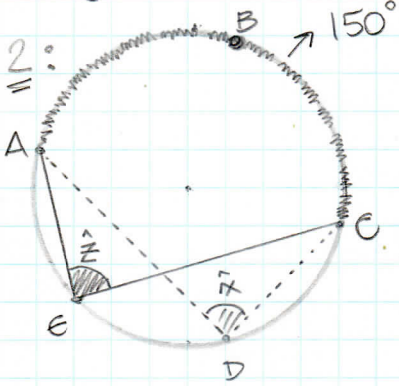
1:



$\hat{z} + 45° + 60° = 180°$

$\hat{z} = 75°$

2:



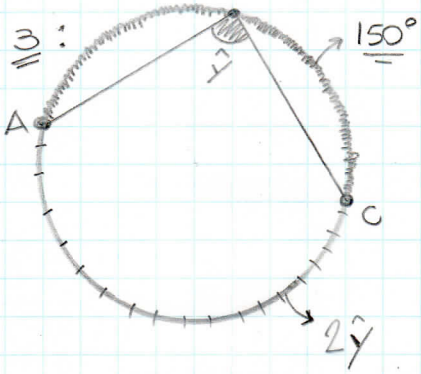
O ARCO $\overset{\frown}{AC}$ TEM MESMA DISTÂNCIA PARA OS ÂNGULOS $\hat{z}$ E $\hat{x}$.

LOGO, $\hat{z} = \hat{x}$.

$\hat{z} = \frac{\overset{\frown}{AC}}{2} \rightsquigarrow 75° \times 2 = \overset{\frown}{AC} \rightsquigarrow \boxed{\overset{\frown}{AC} = 150°}$

$\hat{x} = \frac{\overset{\frown}{AC}}{2} \rightsquigarrow \hat{x} = \frac{150°}{2} \rightsquigarrow \boxed{\hat{x} = 75°}$

3:



$2y = 360° - 150°$

$2y = 210°$

$y = \frac{210°}{2} \rightsquigarrow \boxed{\hat{y} = 105°}$

R: $\hat{x} = 75°$ e $\hat{y} = 105°$.

É UM "AR-CÃO"!