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Nome: João Victor
Turma: CTII 348
Prontuário: 1990527

Tarefa basica.

1)

Ângulo DBA = 60°

Ângulo OBA = 30°

$\operatorname{sen} 30° = \frac{1}{OB}$

$\frac{1}{2} = \frac{1}{OB}$

$OB = \underline{2}$

D

2)

$130 = 90 + \frac{\alpha}{2}$

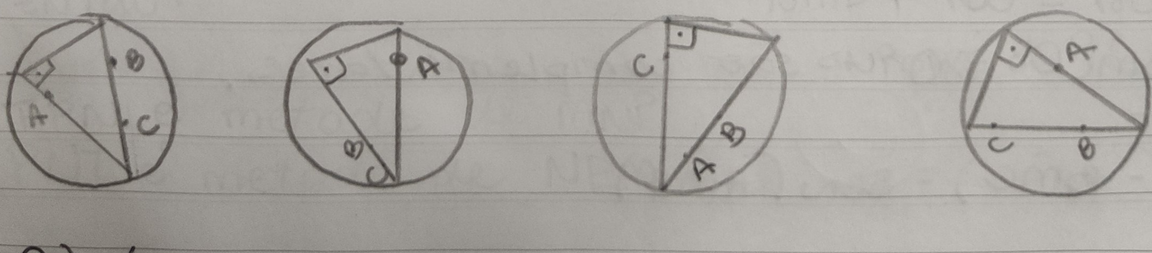
$\frac{\alpha}{2} = 130 - 90$

$\alpha = 40 \cdot 2$

$\alpha = \underline{80°}$

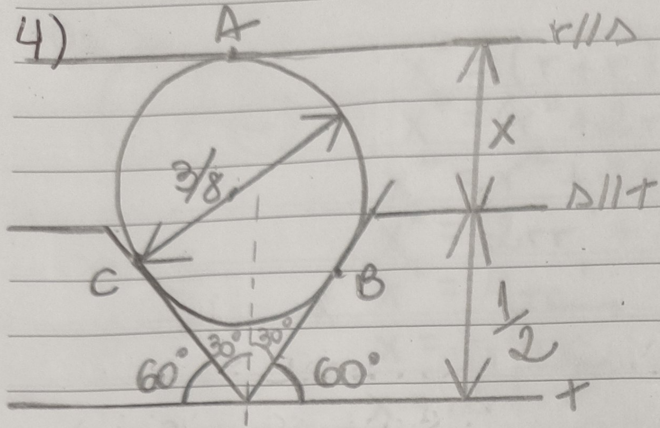
E

3)



B) é retangulo

4)



$\text{Sen } 30° = \frac{CO}{OP}$

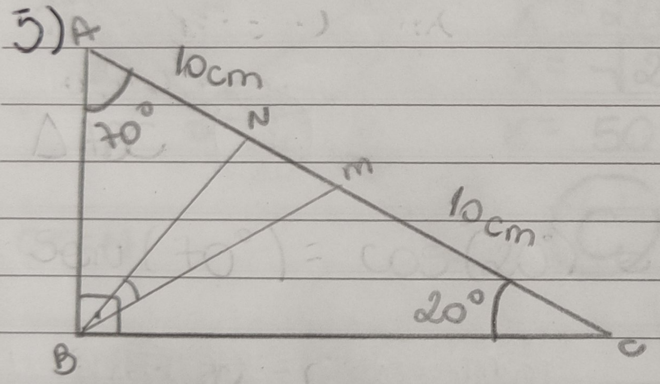
$\frac{1}{2} = \frac{\frac{3}{16}}{OP}$ $\quad OP = \frac{3}{8}$

$\frac{3}{8} + \frac{3}{16} = \frac{9}{16} \rightarrow \frac{9}{16} = \frac{1}{2} + x$

$x = \frac{1}{16}$

E

5)



A) $\text{sen}(70°) = \cos(20°)$ e $\cos(70°) = \text{sen}(20°)$

$AM = MC = 10\text{ cm}$

os angulos $A\hat{M}B$ e $B\hat{M}C$ completam um raso

$A\hat{M}B + B\hat{M}C = 180°$ → são complementares.

$\text{sen}(180° - B\hat{M}C) = \text{sen}(A\hat{M}B)$

$\text{sen}(180°) . \cos(B\hat{M}C) - \cos(180°) . \text{sen}(B\hat{M}C) = \text{sen}(A\hat{M}B)$

$0 . -(-\operatorname{sen}(B\hat{m}C)) = \operatorname{sen}(A\hat{m}B)$
$\operatorname{Sen}(B\hat{m}C) = \operatorname{Sen}(A\hat{m}B)$, e também
$\cos(B\hat{m}C) = -\cos(A\hat{m}B)$

Lei do cosseno ΔABm

$AB^2 = Am^2 + Bm^2 - 2 . Am . Bm . \cos(A\hat{m}B)$
$(20 . \cos(70°))^2 = 10^2 + Bm^2 - 2 . 10 . Bm . \cos(A\hat{m}B)$
$400 . \cos^2(70°) = 100 + Bm^2 - 20 . Bm . \cos(A\hat{m}B)$ I

Lei do cosseno ΔBmC

$BC^2 = mC^2 + Bm^2 - 2 . mC . Bm . \cos(B\hat{m}C)$
$(20 . \operatorname{sen}(70°))^2 = 10^2 + Bm^2 - 2 . 10 . Bm . (-\cos(A\hat{m}B))$
$400 . \operatorname{sen}^2(70°) = 100 + Bm^2 + 20 . Bm . \cos(A\hat{m}B)$ II

I + II

$400 . \cos^2(70°) + 400 . \operatorname{sen}^2(70°) = 100 + Bm^2 - 20 . \to$
$\to . Bm . \cos(A\hat{m}B) + 100 + Bm^2 + 20 . Bm . \cos(A\hat{m}B)$

$400 . (\cos^2(70°) + \operatorname{sen}^2(70°)) = 200 + 2 . Bm^2$
$400 = 200 + 2Bm^2$
$2Bm^2 = 200$
$Bm = \sqrt{\frac{200}{2}}$

$Bm = 10 \text{ cm}$

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5)

$A\hat{B}N = N\hat{B}C = 45^\circ$

Lei do seno em BmC

$\frac{Bm}{sen(20^\circ)} = \frac{mC}{sen(m\hat{B}C)} \Rightarrow \frac{10}{sen(20^\circ)} = \frac{10}{sen(m\hat{B}C)}$

$sen(20^\circ) = sen(m\hat{B}C)$, eles são agudos, então $m\hat{B}C = 20^\circ$

$N\hat{B}C = m\hat{B}N + m\hat{B}C$

$45 = m\hat{B}N + 20$

$m\hat{B}N = 25^\circ$

6)

$OA = OB = r$

$A\hat{P}O = 60^\circ \rightarrow$ Triangulo equilatero $\rightarrow O\hat{P}A + O\hat{P}B = 30^\circ$

ΔOAP retangulo $\rightarrow sen\ O\hat{P}A = \frac{OA}{PO} \rightarrow \frac{1}{2} = \frac{r}{PO}$

$PO = 2r$

C