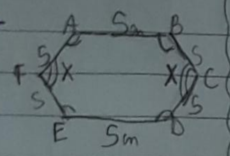
Giovanna Santana Pennisi - CTII 350

Lista de Exercícios - Aula 28

Lista de Exercícios

1-



Soma dos ângulos internos:

$S_i = 180° \cdot (n-2)$

$S_i = 180° \cdot (6-2)$

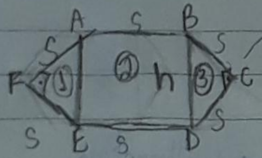
$S_i = 720°$

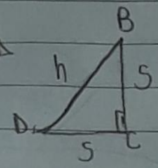
$\hat{A} + \hat{B} + \hat{C} + \hat{D} + \hat{E} + \hat{F} = 720°$

$135° + 135° + x + 135° + 135° + x = 720°$

$2x = 720° - 540°$

$x = \frac{180°}{2} = x = 90°$





$h^2 = S^2 + S^2$

$h^2 = 2S + 2S$

$h = \sqrt{50}$

$h = \sqrt{2 \cdot 25}$

$h = \sqrt{2} \cdot \sqrt{25} = h = S\sqrt{2}$

Área Total = A.1 + A.2 + A.3

$\text{Área Total} = \frac{S \cdot S}{2} + S \cdot S\sqrt{2} + \frac{S \cdot S}{2}$

$\text{Área Total} = \frac{2S}{2} + 2S\sqrt{2} + \frac{2S}{2}$

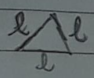
$\text{Área Total} = 2S\left(\frac{1}{2} + \sqrt{2} + \frac{1}{2}\right)$

$\text{Área Total} = 2S\left(\sqrt{2} + \frac{2}{2}\right)$

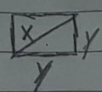
$\text{Área Total} = 2S(\sqrt{2} + 1)$

Alternativa E

2-



I x



$A\square = y^2$

$A\triangle = 16\sqrt{3}\, m^2$

$\frac{l^2\sqrt{3}}{4} = 16\sqrt{3}\, m^2$

$l^2 = \frac{16\cancel{\sqrt{3}} \cdot 4}{\cancel{\sqrt{3}}}$

$l^2 = 64$

$l = \sqrt{64}$

$l = 8\, m$

$x = \frac{l\sqrt{3}}{2}$

$x = \frac{8\sqrt{3}}{\cancel{2}}$

$x = 4\sqrt{3}$

$x^2 = y^2 + y^2$

$(4\sqrt{3})^2 = 2y^2$

$16 \cdot 3 = 2y^2$

$y^2 = \frac{\cancel{16} \cdot 3}{\cancel{2}}$

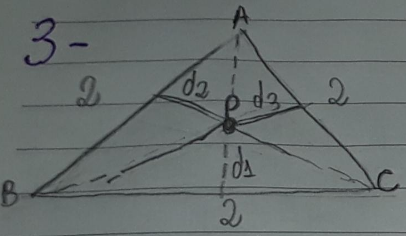
$y^2 = 8 \cdot 3$

$y^2 = 24$

Área do Quadrado

Alternativa B

3-



d_1 = Altura do ΔBCP

d_2 = Altura do ΔABP

d_3 = Altura do ΔACP

distâncias entre os lados dos triângulos e o ponto P

$$\text{Área } \Delta ABC = \frac{2^2\sqrt{3}}{4}$$

$$\text{Área } \Delta ABC = \frac{\cancel{4}\sqrt{3}}{\cancel{4}}$$

$$\text{Área } \Delta ABC = \sqrt{3}$$

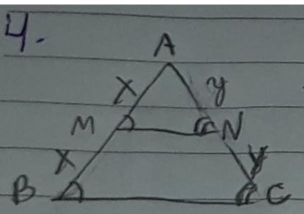
$$\text{Área } \Delta ABC = A.\Delta BCP + A.\Delta ABP + A.\Delta ACP$$

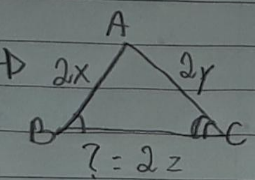
$$\sqrt{3} = \frac{\cancel{2}\cdot d_1}{\cancel{2}} + \frac{\cancel{2}\cdot d_2}{\cancel{2}} + \frac{\cancel{2}\cdot d_3}{\cancel{2}}$$

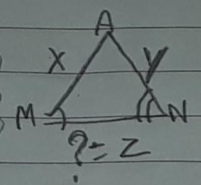
$$d_1 + d_2 + d_3 = \sqrt{3}$$

Alternativa B

4.







ΔABC e ΔAMN são triângulos semelhantes

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

$$\frac{\text{Área } \Delta AMN}{\text{Área } \Delta ABC} = k^2$$

$$\frac{A\Delta AMN}{96} = \left(\frac{1}{2}\right)^2$$

$$\text{Área } \Delta AMN = \frac{96}{4}$$

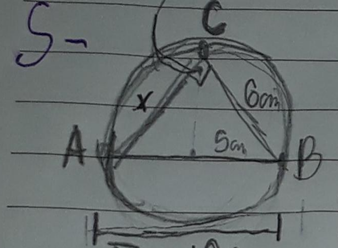
$$\text{Área } \Delta AMN = 24\ m^2$$

Área ⏢ BMNC = $A\Delta ABC - A\Delta AMN$

Área ⏢ BMNC = $96 - 24$

Área ⏢ BMNC = $72\ m^2$

5-



$\overline{AB} = 10$ cm

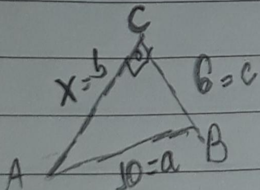
Raio = 5 cm

$A\,\Delta ABC = ?$

diâmetro = $2 \cdot R$

$d = 2 \cdot 5 = 10$ cm

Se o diâmetro é um dos lados do triângulo inscrito na circunferência, o ângulo oposto é reto (90°)



$10^2 = 6^2 + x^2$

$100 = 36 + x^2$

$x^2 = 100 - 36$

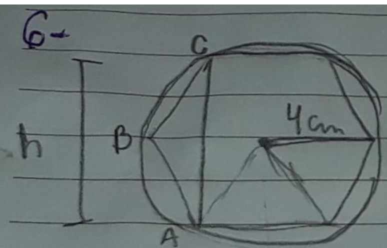
$x^2 = 64$

$x = \sqrt{64}$

$x = 8$ cm

Área $= \frac{a \cdot b \cdot c}{4 \cdot R} = \frac{10 \cdot 8 \cdot 6}{4 \cdot 5} = \boxed{24 \text{ cm}^2}$ Alternativa A

6-



$R = 4$ cm

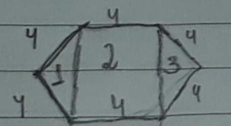
$(A\Delta ABC)^2 = ?$

a = apótema $= \frac{R \cdot \sqrt{3}}{2}$

$2 \cdot a = h$

$h = 2 \cdot \frac{4 \cdot \sqrt{3}}{2}$

$h = 4\sqrt{3}$ cm



$4\sqrt{3}$

Área 1 = Área 3 = X

$A_{⬡} - A2 = A1 + A3$

$(p\,(\text{semiperímetro}) \cdot a) - 4 \cdot 4\sqrt{3} = X + X$

$\frac{6 \cdot 4}{2} \cdot \frac{4 \cdot \sqrt{3}}{2} - 16\sqrt{3} = 2x$

$2x = 24\sqrt{3} - 16\sqrt{3}$

$x = \frac{8\sqrt{3}}{2}$

$x = 4\sqrt{3}$ cm²

$(\text{Área } \Delta ABC)^2 = x^2$

$x^2 = (4\sqrt{3})^2$

$x^2 = 16 \cdot 3$

$\boxed{x^2 = 48 \text{ cm}^2}$