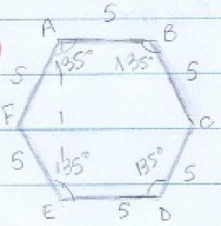
tarefa básica

ÁREAS DE POLÍGONOS



1) $A = ?$ — ABDE ⊳ retângulo

$A+B+D+E = 135° \cdot 4 = 540°$

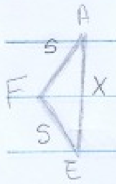
A soma dos ângulos internos de um polígono é:

$S = (n-2) \cdot 180 = (6-2) \cdot 180° = 720°$

$540° - 720° = 180°$

C e F medem 90°, assim formando

2 triângulos retângulos ⊳ AFE e BCD

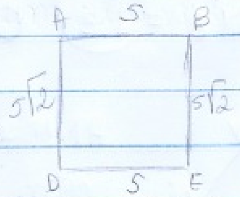


$x^2 = 5^2 + 5^2$

$x^2 = 25 + 25$

$x = \sqrt{50}$

$x = 5\sqrt{2}$



$A_{\square} = b \cdot h$

$A_{\square} = 5 \cdot 5\sqrt{2}$

$A_{\square} = 25\sqrt{2}\ cm^2$

$A_{\Delta} = \frac{5 \cdot 5}{2}$

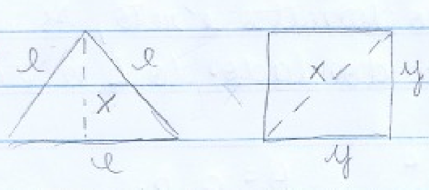
$A_{\Delta} = \frac{25}{2}\ cm^2$

$A_{total} = 2 \cdot A_{\Delta} + A_{\square}$

$A_{total} = \frac{\cancel{2} \cdot 25}{\cancel{2}} + 25\sqrt{2}$

$A_{total} = 25(\sqrt{2}+1)\ cm^2$

Alternativa E)

2) 

$A_{\square} = y^2 \rightarrow x^2 = y^2 + y^2$

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

$16 \cdot 3 = 2y^2$

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

$\boxed{y^2 = 24}$

$A_{\Delta} = 16\sqrt{3}\,m^2$

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

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

⊳ $l^2 = 64$

$l = \sqrt{64}$

$l = 8m$

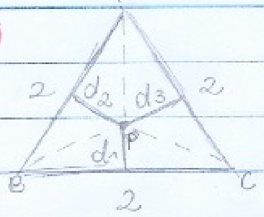
$x_{\Delta} = \frac{l\sqrt{3}}{2}$

$x_{\Delta} = \frac{8\sqrt{3}}{2}$

$x_{\Delta} = 4\sqrt{3}\,m$

Alternativa B)

/ /

3) 

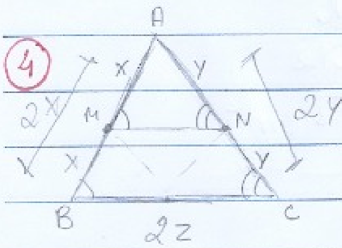
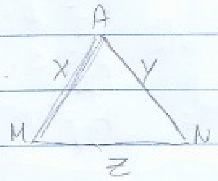
d = distância entre ponto P e lados do triângulo ABC.
e altura dos triângulos BCP, ABP e ACP.

$$A_{\triangle ABC} = \frac{2^2\sqrt{3}}{4} = \frac{\cancel{4}\sqrt{3}}{\cancel{4}} = \sqrt{3}$$

$$A_{\triangle ABC} = A_{\triangle BCP} + A_{\triangle ABP} + A_{\triangle ACP}$$

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

$$d_1 + d_2 + d_3 = \sqrt{3}$$ Alternativa B)

4)  

AMN e ABC são semelhantes com razão $\frac{1}{2}$.

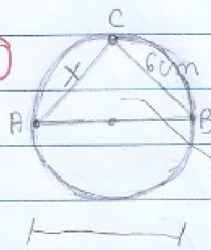
$$\frac{A_{\triangle AMN}}{A_{\triangle ABC}} = \left(\frac{1}{2}\right)^2$$

$$A_{\triangle AMN} = \frac{1}{4} . A_{\triangle ABC}$$

$$A_{\triangle AMN} = \frac{96}{4}$$

$$A_{\triangle AMN} = 24$$

$$A_{BMNC} = 96 - 24 = 72m^2$$

5) 

$R = 5\,cm$ $A_\triangle = ?$

o ângulo oposto ao diâmetro é reto, se o diâmetro for um dos lados do Δ inscrito.

$2R = 2.5 = 10\,cm$
diâmetro

$$10^2 = 6^2 + x^2$$
$$100 = 36 + x^2$$
$$x = \sqrt{64}$$
$$x = 8\,cm$$

$$A = \frac{a.b.c}{4R}$$
$$A = \frac{\cancel{10}.\cancel{8}.6}{\cancel{4}.\cancel{5}}$$
$$\boxed{A = 24\,cm^2}$$

Alternativa A)

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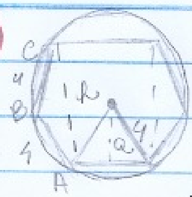
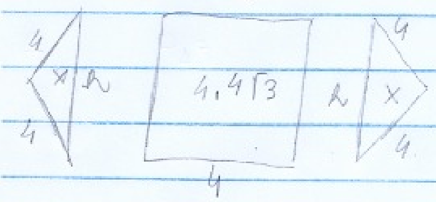


$R = 4\,cm$ $\quad (A_\Delta)^2 = ?$

$a = \frac{R\sqrt{3}}{2}$ $\quad 2.a = h$

$\frac{\cancel{2}.4\sqrt{3}}{\cancel{2}} = h$



$h = 4\sqrt{3}\,cm$

$A_{hex} - A_\square = A_\Delta + A_\Delta$

$(p.a) - 4.4\sqrt{3} = x + x$

$\frac{6.\cancel{4}^{2}}{\cancel{2}} . \frac{\cancel{4}^{2}\sqrt{3}}{\cancel{2}} - 16\sqrt{3} = 2x$

$2x = 6.2.2\sqrt{3} - 16\sqrt{3}$

$2x = 12.2\sqrt{3} - 16\sqrt{3}$

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

$2x = \frac{\cancel{8}\sqrt{3}}{\cancel{2}} = 4\sqrt{3}\,cm^2$

$(A_\Delta)^2 = x^2$

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

$x^2 = 16.3$

$x^2 = 48\,cm^2$