

INSTITUTO FEDERAL
São Paulo
Campus Cubatão

TAREFA BÁSICA 28: ÁREA DE POLÍGONOS

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Exercício 1 e 2:

① $A+B+D+E=540^\circ$ $C \text{ e } F=90^\circ$

$$\begin{aligned} AE \rightarrow x^2 &= S^2 + S^2 \\ x^2 &= 2S + 2S \\ x &= \sqrt{4S} \\ x &= 2\sqrt{S} \text{ cm} \end{aligned} \quad \left\{ \begin{array}{l} ABDE \rightarrow A_{ABDE} = S \times S\sqrt{2} \\ A_{ABDE} = 2S\sqrt{2} \text{ cm}^2 \end{array} \right.$$

$$h = \frac{(S \cdot S)}{S\sqrt{2}} \quad A_{\Delta} = \frac{(S\sqrt{2}) \cdot (S\sqrt{2})}{2}$$

$$h = \frac{S\sqrt{2}}{2} \quad A_{\Delta} = 2S\sqrt{2} \text{ cm}^2$$

$$A_{\text{hex}} = 2 \cdot \left(\frac{2S}{2} \right) + 2S\sqrt{2}$$

$$A = 2S + 2S\sqrt{2} \rightarrow 2S(\sqrt{2} + 1) \text{ cm}^2$$

② $S = \frac{l^2 \sqrt{3}}{4} \quad h = \frac{l\sqrt{3}}{2} \quad d = 2\sqrt{2}$

$$\frac{16\sqrt{3}}{4} = \frac{l^2 \sqrt{3}}{4} \quad h = \frac{8\sqrt{3}}{2} \quad \frac{4\sqrt{3}}{4\sqrt{3}} = \frac{2\sqrt{2}}{2\sqrt{2}}$$

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

$$\frac{64\sqrt{3}}{\sqrt{3}} = \frac{l^2}{4} \quad A = (2\sqrt{6})^2$$

$$\frac{64}{4} = \frac{l^2}{4} \quad A = 4 \cdot 6$$

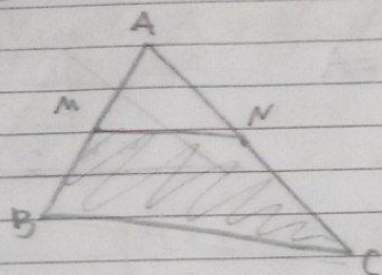
$$\sqrt{64} = \frac{l}{2} \quad A = 24 \text{ cm}^2$$

$$8 = \frac{l}{2}$$

Exercício 3 e 4:

③ $h = \frac{x\sqrt{3}}{1} = \sqrt{3}$

④



$$A = 96 \text{ m}^2$$

$$MN = \frac{1}{2} BC$$

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

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

$$A_{ABC} = x + A_{AMN}$$

$$x = A_{ABC} - A_{AMN}$$

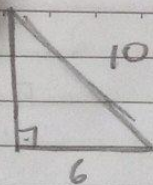
$$x = 96 - \frac{1}{4}(96)$$

$$x = 96 - 24$$

$$x = 72 \text{ m}^2$$

Exercício 5 e 6:

5



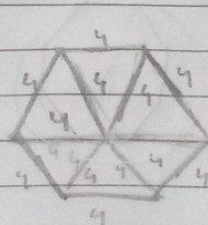
$$\begin{aligned} h^2 &= a^2 + b^2 \\ 10^2 &= 6^2 + b^2 \\ 100 &= 36 + b^2 \\ 100 - 36 &= b^2 \\ 64 &= b^2 \\ \sqrt{64} &= b \\ 8 &= b = AC \end{aligned}$$

$$A_{\Delta} = \frac{(8 \cdot 6)}{2}$$

$$A_{\Delta} = \frac{48}{2}$$

$$A_{\Delta} = 24 \text{ cm}^2$$

6



$$\begin{aligned} r &= 4 & A &= \frac{s^2 \sqrt{3}}{4} \\ & & A &= \frac{16 \sqrt{3}}{4} \\ & & A &= (4 \sqrt{3})^2 \cdot 4 \\ & & A &= 48 \text{ cm}^2 \end{aligned}$$