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Geometria Básica - Área de Polígono

1.

$$A = (n-2) \cdot 180^\circ$$

$$(6-2) \cdot 180^\circ = 720^\circ$$

AE comum ao ABDE e $\triangle AFE$

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

$$x^2 = 50$$

$$x = 5(\sqrt{2})$$

$$A+B+D+E = 540^\circ$$

$$C \text{ e } E = 90^\circ \text{ cm}$$

área do retângulo ABDE

$$A = 5 \cdot (5\sqrt{2})$$

$$A = 25(\sqrt{2})$$

altura do \triangle retângulo

$$h = \frac{(5,5)}{(\sqrt{2})} = \frac{5(\sqrt{2})}{2}$$

área do \triangle

$$A = \frac{5 \cdot (\sqrt{2}) \cdot 5(\sqrt{2})}{2} \Rightarrow A = \frac{25}{2}$$

área do hexágono

$$A = 2 \cdot \left(\frac{25}{2}\right) + 25 \cdot (\sqrt{2}) \Rightarrow 25 + 25\sqrt{2} \Rightarrow A = 25(\sqrt{2} + 1)$$

R: c)

2.

$$A = \left(\frac{l^2 \sqrt{3}}{4} \right) \quad 16\sqrt{3} = \left(\frac{l^2 \sqrt{3}}{4} \right) \rightarrow 64\sqrt{3} = l^2 \sqrt{3}$$

$$64\sqrt{3} \cdot \sqrt{3} = l^2$$

$$64 = l^2 \rightarrow l = 8$$

altura

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

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

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

$$h = d \square$$

d □

$$d = l\sqrt{2}$$

$$4\sqrt{3} = l\sqrt{2}$$

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

A

$$l = \frac{4\sqrt{6}}{2}$$

$$l = 2\sqrt{6}$$

área □

$$A = l^2$$

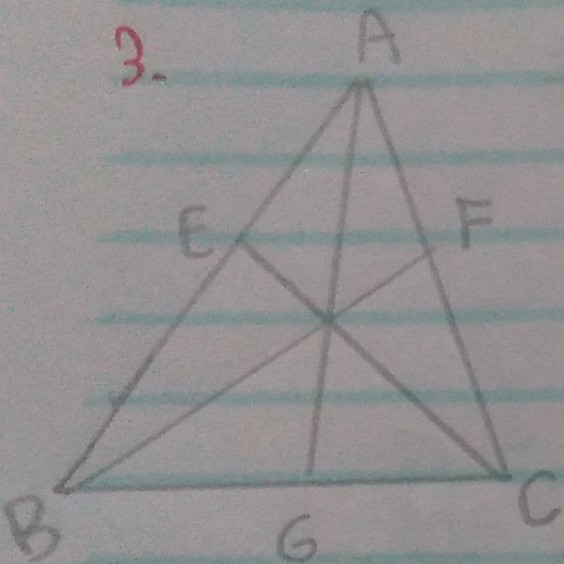
$$A = (2\sqrt{6})^2$$

$$A = 4 \cdot 6$$

$$|A = 24 \text{ m}^2|$$

R: b)

3.

area of $\triangle ABC$

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

$$(APC) = \frac{2h_1}{2} \quad (ABP) = \frac{2h_2}{2} \quad (BPC) = \frac{2h_3}{2}$$

arguing? ok 2 area? - similar 2 area?

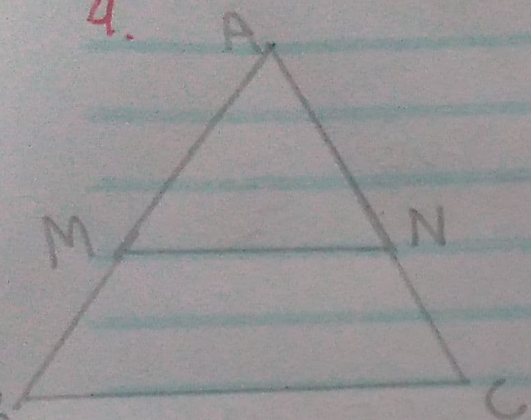
$$\frac{2h_1}{2} + \frac{2h_2}{2} + \frac{2h_3}{2} = (ABC) = \sqrt{3}$$

$$(APC) + (ABP) + (BPC)$$

$$h_1 + h_2 + h_3 = \boxed{\sqrt{3}}$$

R: 2-1

4.



$$MN = \frac{1}{2} BC \quad \begin{array}{l} 2\Delta \text{ semelhantes} \\ \Delta AMN \text{ e } \Delta ABC \end{array}$$

$$\frac{S_{\Delta AMN}}{S_{\Delta ABC}} = \frac{1}{4} \Rightarrow S_{\Delta AMN} = \frac{1}{4} S_{\Delta ABC}$$

x a área do quadrilátero BMNC

$$S_{\Delta ABC} = x + S_{\Delta AMN} \Rightarrow x = S_{\Delta ABC} - S_{\Delta AMN}$$

$$x = 96 - \frac{1}{4}(96) \Rightarrow x = 96 - 24 = 72 \text{ m}^2$$

5.

$$AB = 16$$

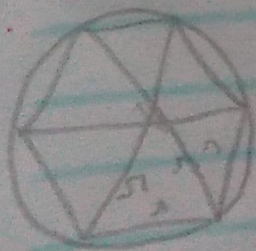
$$BC = 6$$

$$AC^2 + BC^2 = AB^2 \Rightarrow AC^2 + 6^2$$

$$(5+5)^2 \Rightarrow AC = 8$$

$$S = \frac{BC \cdot AC}{2} \Rightarrow S = \frac{6 \cdot 8}{2} = 24$$

6.



$$r = 4 \text{ cm}$$

R: a)

$$S = \frac{1^2 \sqrt{3}}{4} = \frac{4^2 \sqrt{3}}{4} = 4\sqrt{3}$$

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

$$16 \cdot 3 = 48 \text{ cm}^2$$