



Matemática – 5^o período

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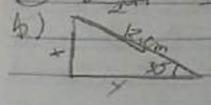
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Prova geometria

① $b = \frac{1}{2}ch = \frac{5,4}{2} = 16 \text{ cm}^2$



$\sin 30^\circ = \frac{x}{12}$
 $\frac{1}{2} = \frac{x}{12}$
 $2x = 12$
 $x = 6 \text{ cm}$

$\cos 30^\circ = \frac{y}{12}$
 $\frac{\sqrt{3}}{2} = \frac{y}{12}$
 $y = 6\sqrt{3}$

② a) $A_{\square} = l^2$
 $A_{\square} = 8^2$
 $A_{\square} = 64 \text{ cm}^2$

b) $A_{\square} = 7,1^2$
 $A_{\square} = 50,41 \text{ cm}^2$

c) $A_{\square} = \sqrt{3}$
 $A_{\square} = 3 \text{ cm}^2$

d) $A_{\square} = 6^2$
 $A_{\square} = 36 \text{ cm}^2$

para passar a diagonal
 tiramos um losango com diagonais
 iguais logo:

$A_{\square} = \frac{D \cdot d}{2}$
 $A_{\square} = \frac{36 \cdot 18}{2} = 324 \text{ cm}^2$

③ a) $A = 25 \text{ cm}^2$
 $A = l \cdot l$
 $25 = l^2$
 $l = \sqrt{25}$
 $l = 5 \text{ cm}$

b) $A = 12 \text{ cm}^2$
 $A = l \cdot l$
 $12 = l^2$
 $l = \sqrt{12}$
 $l = 3,46 \text{ cm}$

④ a) $A = \frac{D \cdot d}{2}$
 $A = \frac{8 \cdot 5}{2} = \frac{40}{2} = 20 \text{ cm}^2$

1 1

$$b) d^2 = \left(\frac{d}{2}\right)^2 + \left(\frac{D}{2}\right)^2$$

$$A = \frac{d \cdot D}{2}$$

$$A = \frac{6 \cdot 8}{2}$$

$$A = 24 \text{ cm}^2$$

$$d^2 = \frac{d^2}{4} + \frac{D^2}{4}$$

$$d^2 + D^2 = 4L^2$$

$$36 + D^2 = 100$$

$$D^2 = 64$$

$$D = 8$$

c) diagonal dan sisi-sisi yang mengapit sudut lainnya
 $\sin 60^\circ = \left(\frac{D}{d}\right)$

$$A = 32(3)$$

$$A = 32.9$$

$$A = 288 \text{ cm}^2$$

$$D = 8(3)$$

$$d = 8$$

$$5) A = \frac{(B+b) \cdot h}{2}$$

6) P-sama dan beraturan

$$d = 72 = K$$

$$A = \frac{(7+5) \cdot 4}{2}$$

$$A = \frac{d^2}{4}$$

$$A = \frac{K^2}{4}$$

$$A = 924 \text{ cm}^2$$

$$A = \frac{12 \cdot 4}{2} = \frac{48}{2}$$

$$A = 24 \text{ cm}^2$$

$$7) A = \frac{(B+b) \cdot h}{2}$$

$$d^2 = 5^2 - 3^2$$

$$b^2 = 25 - 9$$

$$b^2 = 16$$

$$b = \sqrt{16} = 4$$

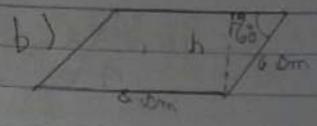
$$A = \frac{18+6}{2} \cdot 4$$

$$= 12 \cdot 4$$

$$2$$

$$= 72 = 36 \text{ cm}^2$$

8) a) $A = b \cdot h$
 $A = 6 \cdot 4$
 $A = 12 \text{ cm}^2$

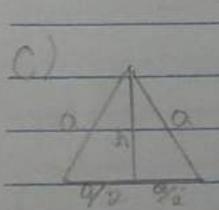


$A = b \cdot h$
 $A = 6 \cdot 3\sqrt{3}$
 $A = 24\sqrt{3} \text{ cm}^2$

$\sin 60^\circ = \frac{\sqrt{3}}{2} = \frac{h}{6}$
 $2h = 6\sqrt{3}$
 $h = 3\sqrt{3}$

9) a) $A = \frac{b \cdot b}{2}$ b)

$A = \frac{8 \cdot 5}{2} = 40$
 $A = 20 \text{ cm}^2$



$a^2 = h^2 + \left(\frac{a}{2}\right)^2$
 $a^2 = h^2 + \frac{a^2}{4}$
 $h^2 = a^2 - \frac{a^2}{4}$
 $h^2 = \frac{3a^2}{4}$

d) $A = \frac{1}{2} \cdot 6 \cdot 8 \cdot \sin 45^\circ$
 $A = \frac{1}{2} \cdot 48 \cdot \frac{\sqrt{2}}{2}$
 $A = \frac{\sqrt{2} \cdot 48}{4}$

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

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

$A = 12\sqrt{2} \text{ cm}^2$

$A = \frac{6^2 \sqrt{3}}{4}$

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

$A = \frac{36\sqrt{3}}{4}$

$A = 9\sqrt{3} \text{ cm}^2$ ou

$P = 6 + 6 + 6 = 18 = 9 \text{ cm}$

$A = \sqrt{9(3)(3)(3)}$
 $A = \sqrt{243}$

$$10) \quad b = \frac{b}{2}$$

$$A = b \cdot h$$

$$450 = b \cdot \frac{b}{2}$$

$$+ b^2 = 900$$

$$b = \sqrt{900}$$

$$b = 30 \text{ cm}$$

$$h = \frac{30}{2} = 15$$

$$11) \quad x = \text{comp.}$$

$$y = \text{com.}$$

$$ixy = 100$$

$$x + 10\% = 1,10x$$

$$y - 10\% = 0,9y$$

$$A = 1,10x \cdot 0,9y$$

$$A = 0,99xy$$

$$? \quad 0,99xy$$

$$100 \text{ cm} \quad \cdot xy$$

$$xy = 100 \cdot 0,99xy$$

$$xy = 99xy$$

$$? = 99xy$$

$$? = \frac{99xy}{xy} = 99 \text{ cm}^2$$

$$12) \quad a) \quad A = \frac{8^2}{4} \sqrt{3} - \pi \left(\frac{4 - \sqrt{3}}{3} \right)^2 \rightarrow 16\sqrt{3} - \frac{16\pi}{3} \rightarrow$$

$$A = \frac{48\sqrt{3} - 16\pi}{3} \text{ cm}^2$$

$$b) \quad A = \frac{10^2}{4} - \frac{10^2 \pi}{4} \rightarrow A = 100 - 25\pi \rightarrow A = 25(4 - \pi) \text{ cm}^2$$

$$c) \quad 180 - 60 = 120 \rightarrow \frac{1}{3} \text{ do círculo}$$

$$A = \frac{1}{3} \pi r^2 \rightarrow 120 \text{ cm}^2$$

$$13 - \begin{array}{l} \text{Initial: } 30 \cdot 15 \rightarrow 450 \text{ m}^2 \\ \text{Final: } (30-6)(15-3) \rightarrow 288 \text{ m}^2 \\ \frac{450-288}{450} \rightarrow 0.36 \rightarrow 36\% \end{array} \quad \textcircled{c}$$

14 - a)

b)

c)

$$15) A = 15 - (5-x)(3-y) \quad \textcircled{e}$$

$$A = 15 - 15 + 3x + 5y - xy$$

$$16) \text{ABPD} = \text{ABD} - \text{PBD} \rightarrow \frac{1}{2} \cdot \frac{1}{2} - \frac{1}{2} \cdot \frac{1}{2} \rightarrow$$

$$\frac{1}{4} - \frac{1}{4} \rightarrow \frac{1}{8} \text{ cm}^2 \quad (B)$$

$$\frac{2 \cdot 1}{8} \rightarrow \frac{1}{4} - \frac{1}{4} \rightarrow \frac{3}{4} \rightarrow \frac{1}{4} \cdot 50 + \frac{3}{4} \cdot 30 = 12.50 + 22.50$$

$$\rightarrow \text{Rp } 35.00$$

$$17) A \rightarrow \frac{\sqrt{3}}{2}$$

$$A = \frac{(1 + \sqrt{3})^2}{2} \quad (C)$$

$$\text{EFGH} \rightarrow 1 + \sqrt{3}$$

$$A = 2 + \sqrt{3}$$

$$18) a) \text{EFGH} = \text{ABCD} - 4(\text{AG}^4)$$

$$= 16a^2 - 6a^2$$

$$= 10a^2$$

$$= \frac{10}{16} \text{ABCD}$$

$$16$$

$$b) A = \frac{[\text{EFGH}]}{2} \rightarrow \frac{10}{32} [\text{ABCD}] \rightarrow 25 \text{ cm}^2 \rightarrow d = 5 \text{ cm}$$

$$19) a) \frac{2 \cdot 8}{2} = 8 \rightarrow 100 - 4 \cdot 8 = 68 \text{ cm}^2$$

$$b) 100 - 4x(10 - x) = 2x^2 - 20x + 100 \text{ cm}^2$$

c)

$$20) A_{\Delta} = 8 \text{ cm}^2 \text{ e } 16 \text{ cm}^2 \quad \text{triângulo } 100 \text{ cm}^2$$

$$24 + 8 + 16 = 50 \text{ cm}^2 \quad \textcircled{D}$$

21) a) $A_{\Delta ABC} = A_{\Delta DCB}$ (mesmo base e mesma altura)
 $A_{\Delta ABC} + A_{\Delta ACC} = A_{\Delta DCB} + A_{\Delta ACE}$, segue que $A_{\Delta ABC} = A_{\Delta DCB}$

b) $A_{\Delta AGH} = A_{\Delta ABC} = 5 \text{ cm}^2$
 $A_{\Delta DGH} = A_{\Delta DEF} = 4 \text{ cm}^2$
 $\rightarrow A_{\Delta AGDH} = A_{\Delta AGH} + A_{\Delta DGH} = 5 + 4 = 9 \text{ cm}^2$

22) Área de terreno $\rightarrow 160 \cdot 120 - 60 \cdot 50$
 $= 16200 \text{ cm}^2$

$$16200 \rightarrow 8100 \text{ cm}^2$$

$$A_{\Delta BCP} = 8100 \rightarrow \frac{(120 - x + 50) \cdot 100}{2} = 8100 \Rightarrow 170 - x = 162$$

$$\rightarrow x = 8 = FO \quad \textcircled{B}$$

