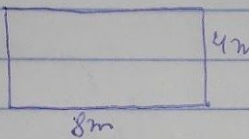
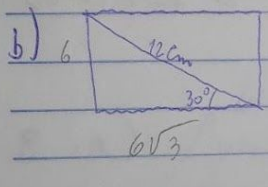


27/06/18

Instituto Federal de Mato Grosso do Sul  
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### Atividades

1- a)   $A = l \cdot l$   
 $A = 4 \cdot 8 \rightarrow A = 32 \text{ cm}^2$

b)   $\cos 30^\circ = \frac{CA}{\text{hip}} \rightarrow \frac{\sqrt{3}}{2} = \frac{x}{12} \rightarrow 12\sqrt{3} \rightarrow x = 6\sqrt{3}$   
 $\sin 30^\circ = \frac{CO}{\text{hip}} \rightarrow \frac{1}{2} = \frac{y}{12} \rightarrow 2x = 12 \rightarrow x = 6$

$A = 6 \cdot 6\sqrt{3} \rightarrow 36\sqrt{3} \text{ cm}^2$

2- a) lado mede 8cm  
 $A = 8 \cdot 8 \rightarrow 64 \text{ cm}^2$

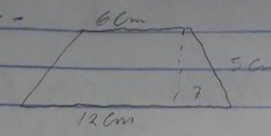
b) lado mede 7,1 cm  
 $A = 7,1 \cdot 7,1 \rightarrow 50,41 \text{ cm}^2$

c) lado mede  $\sqrt{3}$  cm  
 $A = \sqrt{3} \cdot \sqrt{3} \rightarrow A = 3 \text{ cm}^2$

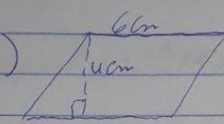
d) diagonal mede 6cm  
 $\sin 45^\circ = \frac{CO}{\text{hip}} \rightarrow \frac{\sqrt{2}}{2} = \frac{x}{6} \rightarrow x = 3\sqrt{2}$   
 $A = 3\sqrt{2} \cdot 3\sqrt{2} \rightarrow 9 \cdot \sqrt{4} \rightarrow 9 \cdot 2 = 18 \text{ cm}^2$

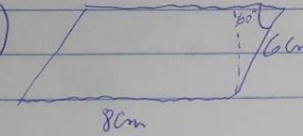
$$6 - \frac{72}{4} \rightarrow 18 \text{ cm}$$

$$A = 18 \cdot 18 \rightarrow 324 \text{ cm}^2$$

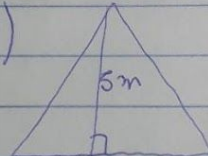
7 -   $5^2 - 3^2 + x^2 + 25 = 9 + x^2$   
 $x = \sqrt{16} \rightarrow x = 4$

$$A = \frac{(B+b) \cdot h}{2} \rightarrow \frac{(12+6) \cdot 4}{2} \rightarrow 36 \text{ cm}^2$$

8 - a)   $A = b \cdot h \rightarrow 6 \cdot 4 \rightarrow 24 \text{ cm}^2$

b)   $\sin 60^\circ = \frac{CO}{NO} \rightarrow \frac{\sqrt{3}}{2} = \frac{x}{6} \rightarrow 2x = 6\sqrt{3}$   
 $x = 3\sqrt{3}$

$$A = b \cdot h \rightarrow 8 \cdot 3\sqrt{3} \rightarrow 24\sqrt{3} \text{ cm}^2$$

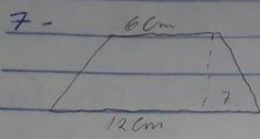
g)   $A = \frac{b \cdot h}{2} \rightarrow \frac{8 \cdot 5}{2} \rightarrow \frac{40}{2}$

$$A = 20 \text{ cm}^2$$



$$6 - \frac{72}{4} \rightarrow 18 \text{ cm}$$

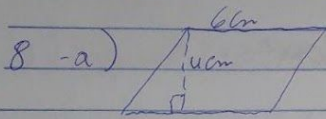
$$A = 18 \cdot 18 \rightarrow 324 \text{ cm}^2$$



$$5^2 - 3^2 + x^2 + 25 = 9 + x^2$$

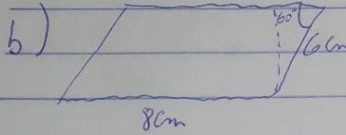
$$x = \sqrt{16} \rightarrow x = 4$$

$$A = \frac{(B+b) \cdot h}{2} \rightarrow \frac{(12+6) \cdot 4}{2} \rightarrow 36 \text{ cm}^2$$



8 - a)

$$A = b \cdot h \rightarrow 6 \cdot 4 \rightarrow 24 \text{ cm}^2$$

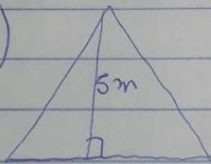


$$\sin 60^\circ = \frac{CO}{NO} \rightarrow \frac{\sqrt{3}}{2} = \frac{x}{6} \rightarrow 2x = 6\sqrt{3}$$

$$x = 3\sqrt{3}$$

$$A = b \cdot h \rightarrow 8 \cdot 3\sqrt{3} \rightarrow 24\sqrt{3} \text{ cm}^2$$

9)



$$A = \frac{b \cdot h}{2} \rightarrow \frac{8 \cdot 5}{2} \rightarrow \frac{40}{2} \rightarrow$$

$$A = 20 \text{ cm}^2$$

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

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

$$b) A = D - \Pi \rightarrow A = 10^2 - \frac{10^2 \pi}{4} \rightarrow A = 100 - 25\pi$$

$$A = 25(4 - \pi) \text{ cm}^2$$

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

$$A = \frac{6^2 \pi}{3} \rightarrow 12\pi \text{ cm}^2$$

$$13) \text{ Inicial: } 30 \cdot 15 \rightarrow 450 \text{ cm}^2$$

$$\text{Final: } (30-6)(15-3) \rightarrow 288 \text{ cm}^2$$

$$\frac{450 - 268}{450} \rightarrow 0,36 \rightarrow 36\% \quad (C)$$

14-a) Área do setor circular:  $\frac{1}{8} \text{ cm}^2$

$$\theta_{\text{rad}} = \frac{\theta \cdot \pi}{180} = \frac{135 \cdot \pi}{180} = \frac{3\pi}{4}$$

$$A = \frac{1}{2} \left( \frac{3\pi}{4} \right) (64) = \frac{3\pi}{8} (64) = 24\pi \text{ cm}^2$$

$$A = 24 - 16\sqrt{2} \text{ cm}^2$$

Área do triângulo

$$A = \frac{1}{2} bh = b = 8 \text{ cm}; h = 8 \cdot \sin 45^\circ$$

$$h = 8 \cdot \frac{\sqrt{2}}{2} = 4\sqrt{2} \text{ cm}$$

$$A = \frac{1}{2} (8) (4\sqrt{2}) = 16\sqrt{2} \text{ cm}^2$$

b)

e)

$$\begin{aligned} 15) \quad A &= 15 - (5-x)(3-y) \\ A &= 15 - 15 + 3x + 5y - xy \quad (E) \\ A &= 5y + 3x - xy \end{aligned}$$

$$16- \quad ABPD = ABD - PBD \rightarrow \frac{1 \cdot \frac{1}{2}}{2} - \frac{1 \cdot \frac{1}{4}}{2} \rightarrow$$

$$\frac{1}{4} - \frac{1}{8} \rightarrow \frac{1}{8} \text{ m}^2 \quad \rightarrow \frac{1}{4} \cdot 50 + \frac{3}{4} \cdot 30 = 12,50 \cdot 22,5$$

RH 35,00

$$2 \cdot \frac{1}{8} \rightarrow \frac{1}{4} - 1 + \frac{3}{4}$$

(B)

17-

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

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

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

(C)

$$18-a) [EFGH] = ABCD - 4(AEH)$$

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

$$= 10a^2$$

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

$$b) A = \frac{[EFGH]}{2} \rightarrow \frac{10}{32} [ABCD] \rightarrow 25 \text{ cm}^2 \rightarrow h = 50 \text{ cm}$$

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

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

c)

$$20- \text{Área dos triângulos} \rightarrow 8 \text{ m}^2 + 18 \text{ m}^2$$

$$24 + 8 + 18 \rightarrow 50 \text{ m}^2 \rightarrow 100 \text{ m}^2$$

retângulo: (D)

21-

11

$$22 - \text{Área do terreno} \rightarrow 160 \cdot 120 - 60 \cdot 50 = 16200 \text{ m}^2$$

$$\frac{16200}{2} \rightarrow 8100 \text{ m}^2$$

$$ABCP = 8100 \rightarrow \frac{(120 - x + 150) \cdot 100}{2} = 8100 \rightarrow$$

$$170 - x = 162 \rightarrow x = 8 = FD$$

(B)



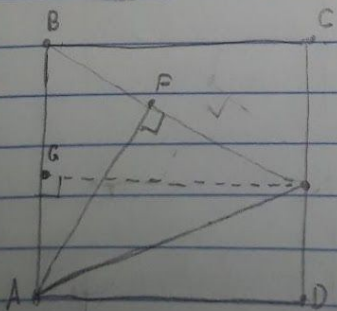
$$\begin{aligned}
 23 \rightarrow [AEC] &= [AECOD] - [ACD] \\
 &= [AEPD] + [ECP] - [ACD] \\
 &= \frac{4(6+4\sqrt{3})}{2} + \frac{4 \cdot 4\sqrt{3}}{2} - 24 \\
 &= 12 + 8\sqrt{3} + 8\sqrt{3} - 24 \\
 &= 16\sqrt{3} - 12 \\
 &= 4(4\sqrt{3} - 3).
 \end{aligned}$$

$$24 \rightarrow \frac{2\pi}{3} + \frac{4\pi}{3} - \sqrt{3} + \sqrt{3} = 2\pi$$

(A)

$$25 \rightarrow \text{Área hachurada} = 5 \left( \frac{a^2 \pi}{6} - \frac{a^2 \sqrt{3}}{4} \right)$$

$$26 \rightarrow 72 = \frac{AF \cdot BE}{2} = \frac{AF \cdot 16}{2} = 8AF$$



Portanto, o comprimento de  
 $AF = \frac{72}{8} = 9$

$$27- FH = GE \quad HO = FO - FH = OE - GE = OG$$

Como o Raio do semicírculo de diâmetro FE mede  $\frac{1}{2}$ , a área sombreada mede  $\frac{1^2 \pi}{2} = \frac{\pi}{2}$

28  $\Rightarrow$

$$AK = 180^\circ - LLM - BLM = 180^\circ - 90^\circ - BLM = 90^\circ - BLM = BLM$$

Portanto  $x = AK, AL = 4 - x, BB = x$

$$BM = AL = 4 - x$$

$$AK + MB = \frac{AK + BM}{2} \cdot AB = \frac{x + (4 - x)}{2} \cdot 4 = 8$$

(B)

14 d

$$b) (6+r), (6-r), (12-r)$$

$$(6+r)^2 = (6-r)^2 + (12-r)^2$$

$$12r = -12r + 144 - 24r + r^2$$

$$r^2 - 48r + 144 = 0$$

$$r = 12(2 - \sqrt{3}) \text{ cm}$$

$$\pi r [12(2 - \sqrt{3})]^2 = 144(7 - 4\sqrt{3}) \text{ cm}^2$$

$$c) A = 2 \left( \frac{4^2 \pi}{3} - \frac{4 \cdot 4 \cdot \sin 130^\circ}{2} \right)$$

$$= 2 \left( \frac{16\pi}{3} - 4\sqrt{3} \right)$$

$$= 4 \left( \frac{8\pi}{3} - 2\sqrt{3} \right) \text{ cm}^2$$