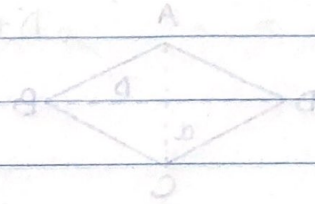


Área de Quadrilátero e Triângulo

resumo:



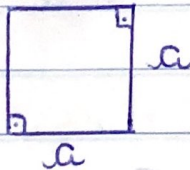
* fator de conversão

$$1 \text{ km} = 10^3 \text{ m} \longrightarrow 1 \text{ km}^2 = 10^6 \text{ m}^2$$

$$1 \text{ cm} = 10^{-2} \text{ m} \longrightarrow 1 \text{ cm}^2 = 10^{-4} \text{ m}^2$$

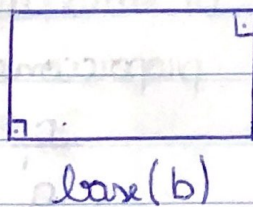
* área de quadrilátero

▷ quadrado



$$A = a^2$$

▷ retângulo



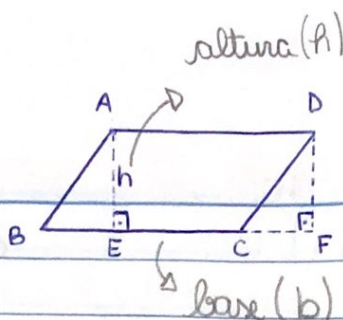
altura (h)

base (b)

$$A = b \cdot h$$

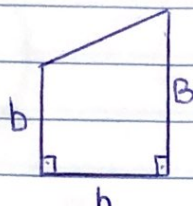
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▷ paralelograma



$$A = b \cdot h$$

▷ trapézio

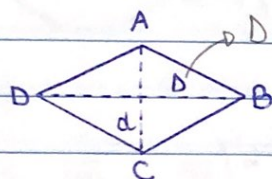


$$A = \frac{(B + b) \cdot h}{2}$$

* área de um losango

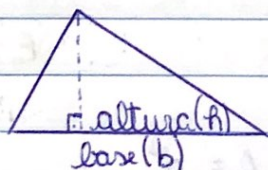
paralelograma (e portanto é também um trapézio)

4 lados congruentes



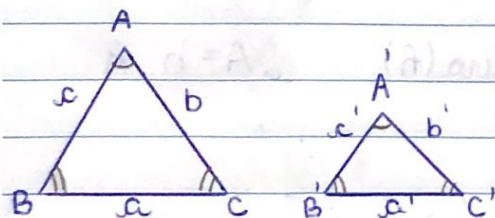
$$A = \frac{D \cdot d}{2}$$

* área de Triângulo



$$A = \frac{b \cdot h}{2}$$

* área de figuras semelhantes



os lados de um Triângulo são proporcionais entre si

$$\frac{a}{a'} = \frac{b}{b'} = \frac{c}{c'} = k$$

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↳ perímetro

▷ o perímetro do $\triangle ABC$ é dado por:

$$P = a + b + c$$

▷ o perímetro do $\triangle A'B'C'$ é dado por:

$$P' = a' + b' + c'$$

$$\text{logo } \frac{P}{P'} = K$$

↳ área

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

Tarefa prática!

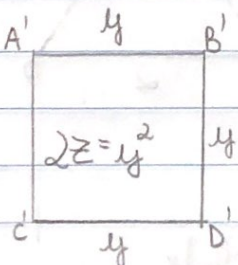
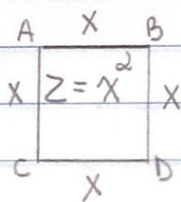
01. 400 peças $a. \frac{36}{400} = 0,09 \text{ m}^2 //$
 $A = 36 \text{ m}^2$

b. $l^2 = 0,09 \text{ m}^2$ $\sqrt{l^2} = \sqrt{9} \text{ m}$
 $l^2 = \frac{9}{100} \text{ m}^2$ $\sqrt{\frac{9}{100}} = \frac{3}{10}$
 $l = 0,3 \text{ m}$

4 lados

$$\hookrightarrow 0,3 \cdot 4 = 1,2 \text{ m} //$$

02.



$$y = ?$$

$$2 = \frac{y^2}{x^2}$$

$$2x^2 = y^2$$

$$\sqrt{2} \cdot \sqrt{x^2} = \sqrt{y^2}$$

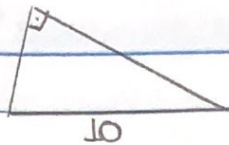
$$y = \sqrt{2} x$$

dk



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03.



$$A = 15$$

$$h = ?$$

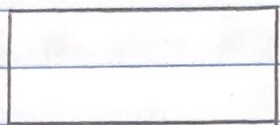
$$A = \frac{b \cdot h}{2}$$

$$15 = \frac{10 \cdot h}{2}$$

$$30 = 10 \cdot h$$

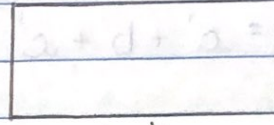
$$h = \frac{30}{10} = 3$$

04.



$$x+3$$

$$x$$



$$x+4$$

$$x+1$$

$$A = x \cdot (x+3)$$

$$A = x^2 + 3x \text{ m}^2$$

$$A = (x+1) \cdot (x+4)$$

$$A = x^2 + 5x + 4 \text{ m}^2$$

$$\text{área I} + 16 \text{ m}^2 = \text{área final}$$

$$x^2 + 3x + 16 = x^2 + 5x + 4$$

$$\cancel{x^2} - \cancel{x^2} + 3x - 5x = 4 - 16$$

$$(-1) \cdot 2x = -12$$

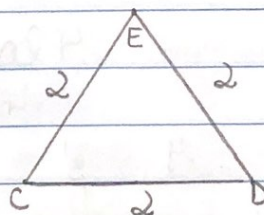
$$x = 6$$

↳ substitui na área final

$$A = 6^2 + 6 \cdot 5 + 4$$

$$A = 70 \text{ m}^2$$

05. A do $\triangle DCE = ?$



$$A = \frac{2 \cdot \sqrt{3}}{2}$$

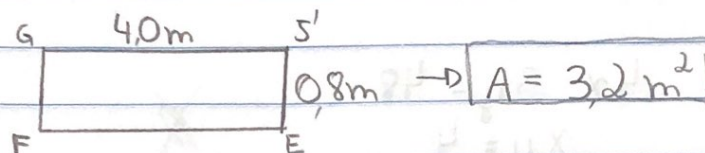
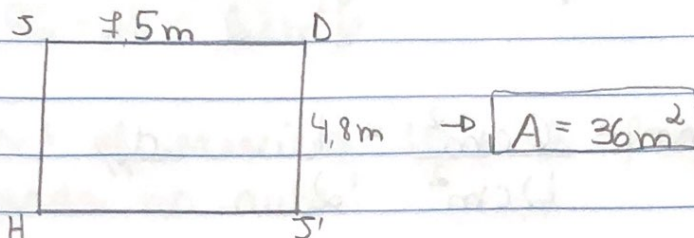
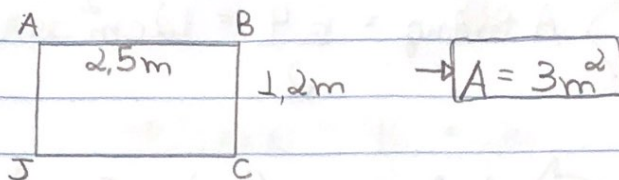
$$A = \frac{\cancel{2} \cdot \sqrt{3}}{\cancel{2}}$$

$$A = \sqrt{3}$$

↳

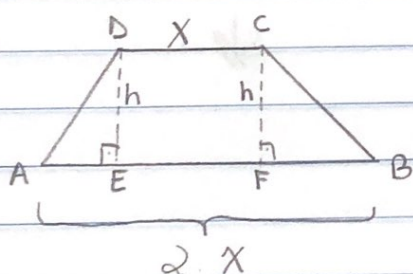
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06. ^{Total} $A = ? \text{ m}^2$ (dividir em três a sala)



→ Somar as áreas $3 + 36 + 3,2 = 42,2 \text{ m}^2$

07.



A do retângulo CDEF = ?
cm

$$A_{\text{trapézio}} = \frac{(B+b) \cdot h}{2}$$

$$36 = \frac{(2x+x) \cdot h}{2}$$

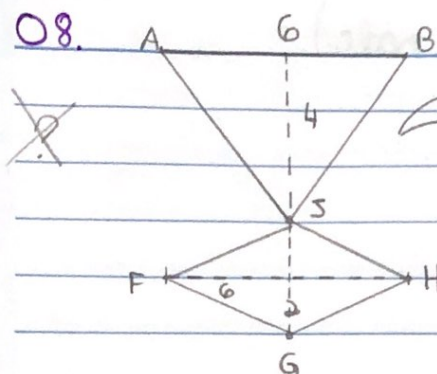
$$72 = 3x \cdot h$$

$$\frac{72}{3} = x \cdot h = 24 \text{ cm}^2$$

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correção da
prof. 12/07

08.



$$A_{\text{triângulo}} = \frac{6 \cdot 4}{2} = 12 \text{ cm}^2$$

$$A_{\text{loação}} = \frac{6 \cdot 2}{2} = 6 \text{ cm}^2$$

$$\text{razão} = \frac{6 \text{ cm}^2}{12 \text{ cm}^2} = \frac{1}{2} \quad \text{d/}$$

09. desenho na
folhinha

$$4x \cdot 3y = 48$$

$$xy = 4$$

$$\textcircled{1} = \frac{3y \cdot 3x}{2} = \frac{4 \cdot 9}{2} = 18$$

$$48 - 18 - 8 = 22$$

$$\textcircled{2} = \frac{4x \cdot y}{2} = \frac{4 \cdot 4}{2} = 8$$

10. do professor!

$$\frac{S_{ADE}}{S_{ABC}} = \frac{1}{2} = K^2 \quad \Rightarrow \quad K = \frac{1}{\sqrt{2}}$$

$$\frac{\overline{AD}}{\overline{AB}} = K \quad \rightarrow \quad \frac{\overline{AD}}{8} = \frac{1}{\sqrt{2}} \quad \rightarrow \quad \overline{AD} = \frac{8}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = 4\sqrt{2}$$

d/

11. do professor!

$$\Delta AMU \sim \Delta ABC \quad \rightarrow \quad K = \frac{1}{2}$$

12/07/21

$$\frac{S_{AMN}}{S_{ABC}} = K^2 = \frac{1}{4} \rightarrow \frac{S_{AMN}}{96} = \frac{1}{4}$$

$$\rightarrow S_{AMN} = \frac{96}{4} = 24$$

$$96 - 24 = 72 \text{ m}^2 //$$

obs: os exercícios 10 e 11 foram apagados e copiados na aula!