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Turma: CTII 348

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Disciplina: Matemática

IFSP - Câmpus Cubatão

Tarefa Básica 09
Área de Quadriláteros e Triângulos
(Fotos nas páginas seguintes)

Exercícios 1, 2, 3 e 4:

Matemática I - Círcos de Quadriláteros e Triângulos

Solução Básica

1-) 400 pesos | círculo = 36 m^2 | peca em formato de quadrado.

A-) $36 = \boxed{0,09 \text{ m}^2}$ m B-) $0,09 = l^2$

$$400$$

$$l = \sqrt{0,09} \Rightarrow 0,3$$

$$\sqrt{1,2} = 0,3 \cdot 4 \Rightarrow \boxed{1,2 \text{ m}} \text{ m}$$

2-) $S = x^2$ $x^2 = y^2$

$$25 = y^2$$

$$\therefore S = \frac{y^2}{\pi}$$

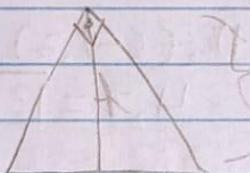
$$\frac{x^2}{2}$$

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

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

$$y = \sqrt{2} \times \boxed{x} \text{ m}$$

3-) $15 = 10 \cdot h \Rightarrow 10h = 30$



$$h = 3 \text{ m } \text{altura!}$$

$$10$$

$$2117$$

4-) $\boxed{\begin{array}{|c|c|} \hline x & \\ \hline 5 & x+3 \text{ m} \\ \hline \end{array}}$ } $S = x \cdot (x+3)$

$$S = x^2 + 3x$$

$$x^2 + 3x = x + 5x - 12$$

$$3x = 5x - 12$$

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

$\boxed{\begin{array}{|c|c|} \hline x+1 & x+4 \\ \hline 5+16 \text{ m}^2 & x+4 \\ \hline \end{array}}$ } $S+16 = (x+1) \cdot (x+4)$

$$S+16 = x^2 + 4x + x + 4$$

$$S = x^2 + 5x - 12$$

$$\boxed{x=6}$$

$$\therefore S = 6^2 + 3 \cdot 6$$

$$S = 36 + 18$$

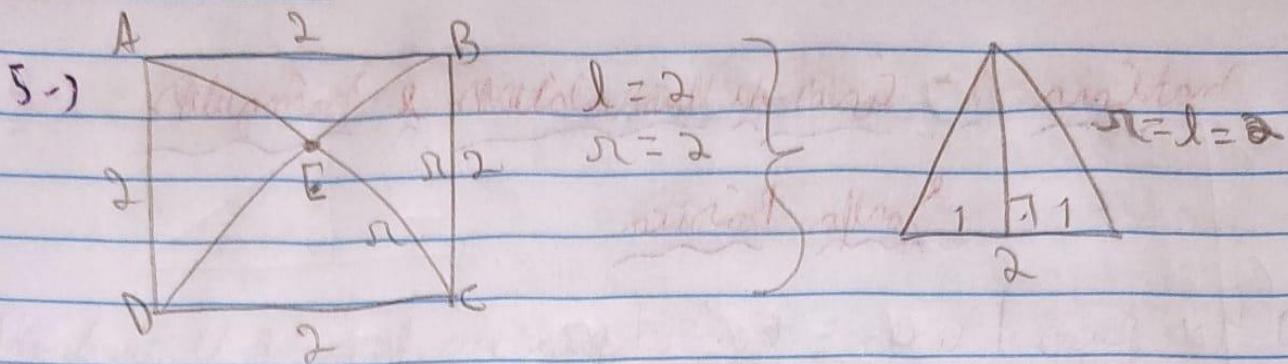
$$\boxed{S = 54}$$

$$\therefore S+16$$

$$84+16$$

$$\boxed{70 \text{ m}^2} \text{ m}$$

Exercícios 5 e 6:



$$\begin{aligned} 2^2 &= 1^2 + h^2 \rightarrow h = \sqrt{3} \\ 1^2 &= 4 - 1 \end{aligned} \quad \left\{ \begin{array}{l} A = \frac{b \cdot h}{2} \Rightarrow \frac{2 \cdot \sqrt{3}}{2} \\ \text{Altura B} \end{array} \right.$$

$\approx 1,7$

$\text{Altura B } 4 \sqrt{3} \text{ m}$

6-)

$$A = b \cdot h$$

$$2,5 \cdot 1,2 = 3 \text{ m}^2$$

$$A = \frac{(b_1 + b_2) \cdot h}{2}$$

$$(3,5 + 4) \cdot (6 - 1,2) = 7,5 \cdot 4,8 = 36 \text{ m}^2$$

$$A = b \cdot h$$

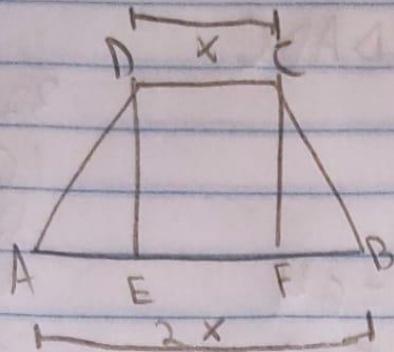
$$4 \cdot 0,8 = 3,2 \text{ m}^2$$

$\text{Área total} = 3 + 36 + 3,2 = 42,2 \text{ m}^2$

Altura E

Exercícios 7, 8 e 9:

7-)



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

$$AB = 2 \cdot CD$$

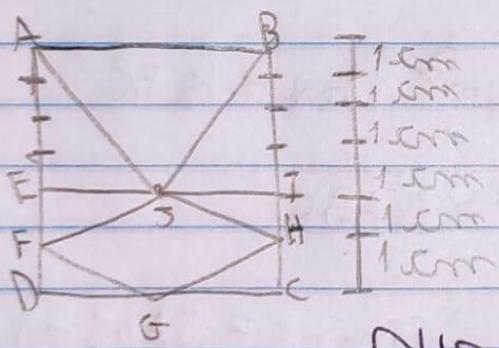
$$CDEF = ? \text{ cm}^2$$

$$S_{ABCD} = \frac{(B+F) \cdot f}{2} \Rightarrow 36 = \frac{(2x+x) \cdot f}{2} \Rightarrow$$

$$\Rightarrow f = 3x \cdot f \Rightarrow x \cdot f = 24$$

$$\text{A partir de } x \cdot f = S_{CDEF} = 24 \text{ cm}^2$$

8-)



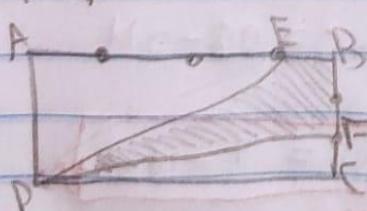
$$S_{ABJ} = 6 \cdot 4 = 24 \Rightarrow 12 \text{ cm}^2$$

$$S_{FGHI} = \frac{6 \cdot 2}{2} = 6 \text{ cm}^2$$

$$\frac{S_{FGHI}}{S_{ABJ}} = \frac{6 \cdot 6}{12 \cdot 6} \Rightarrow \frac{1}{2}$$

distancia D
2m

9-)



$$S_{ABCD} = 4x \cdot 3x \quad S_{ADE} = (2 \cdot 3) \cdot (2 \cdot 3)$$

$$48 = 12x^2$$

$$x^2 = 4$$

$$\boxed{x = 2}$$

$$S_{ADE} = 18$$

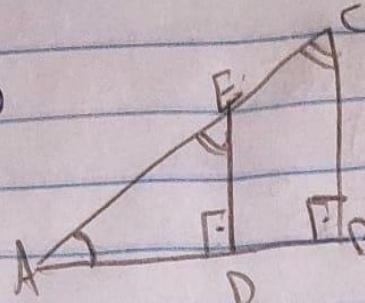
$$SCDF = (2 \cdot 4) \cdot 2$$

$$\boxed{SCDF = 8}$$

$$S_{BEFD} = 48 - 18 - 8$$

$$\boxed{S_{BEFD} = 22} \rightarrow \text{álgebra E}$$

Exercícios 10 e 11:

10-) 

$\Delta ADE \sim \Delta ABC$

32	$\cancel{2}$
16	$\cancel{2}$
8	$\cancel{2}$
4	$\cancel{2}$
2	$\cancel{2}$
1	$\cancel{2}$

$$\left(\frac{AD}{AB}\right)^2 = \frac{S_{ADE}}{S_{ABC}}$$

$$\left(\frac{AD}{8}\right)^2 = \frac{1/2 \cdot S_{ADE}}{S_{ABC}}$$

$$2AD^2 = 64$$

$$AD^2 = 32$$

$$AD = \sqrt{32}$$

$$AD = \sqrt{2 \cdot 2 \cdot 2 \cdot 2}$$

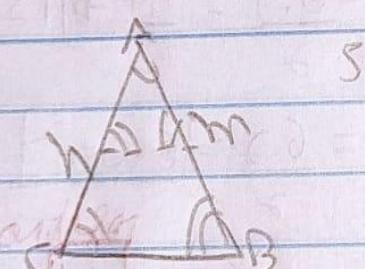
$$AD = 2 \cdot 2\sqrt{2}$$

Desenho A

$$\boxed{AD = 4\sqrt{2}}$$

$$\frac{AD^2}{64} \times \frac{1}{2}$$

N/A

11-) 

$\Delta AMN \sim \Delta ABC$

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

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

$$S_{AMN} = 1/4 \cdot 96 = 24$$

$$S_{BMC} = S_{ABC} - S_{AMN}$$

$$S_{BMC} = 96 - \frac{1}{4} \cdot 96$$

$$S_{BMC} = 96 - 24$$

$$\boxed{S_{BMC} = 72 \text{ m}^2}$$

Desenho B