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Turma: CTII 348

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Disciplina: Matemática

IFSP - Câmpus Cubatão

Tarefa Básica 05

Triângulo Retângulo

(Fotos nas páginas seguintes)

Exercícios 1, 2, 3 e 4:

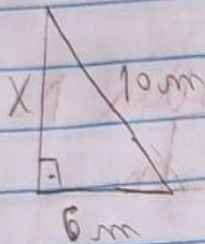
Matéria 5 - Triângulos Retângulos

Teorema de Pitágoras

1-1 $X^2 = (\sqrt{3})^2 + (\sqrt{4})^2$ \rightarrow $X = \sqrt{7}$ m Solução B
 $X^2 = 3 + 4$

~||~

2-1



$$10^2 = X^2 + 6^2$$

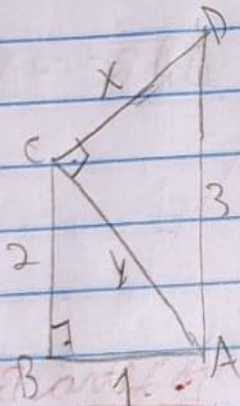
$$100 = X^2 + 36$$

$$X^2 = 64$$

$X = \sqrt{64} \rightarrow X = 8$ m

~||~

3-1



$$y^2 = 1^2 + 2^2$$

$$y^2 = 5$$

$$3^2 = y^2 + X^2$$

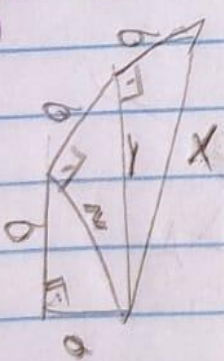
$$9 = 5 + X^2$$

$$X^2 = 4$$

$X = \sqrt{4} \rightarrow 2$ m Solução B

~||~

4-1



$$Z^2 = a^2 + a^2$$

$$Z^2 = 2a^2$$

$$y^2 = Z^2 + a^2$$

$$y^2 = 3a^2$$

$$X^2 = y^2 + a^2$$

$$X^2 = 4a^2$$

$$X = \sqrt{4 \cdot a^2}$$

$X = 2a$ m Solução B.

Exercícios 5, 6 e 7:

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$$5-1) 6^2 = 2^2 + X^2$$

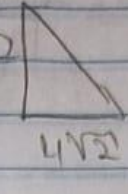
$$X^2 = 32$$

$$X = \sqrt{2 \cdot 2^2 \cdot 2^2}$$

$$X = 4\sqrt{2}$$

$$\begin{array}{r|l} 32 & 2) \\ 16 & 2) \\ 8 & 2) \\ 4 & 2) \\ 2 & 2) \\ 1 & \end{array}$$

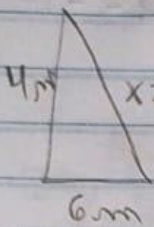
Grav:



$$(4\sqrt{2}) \cdot X \Rightarrow 4\sqrt{2} \text{ m}$$

Situa C.

6-1)

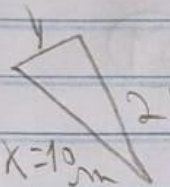


$$x = 10 \text{ m}$$

$$x^2 = 8^2 + 6^2$$

$$x^2 = 100$$

$$\Rightarrow x = 10$$



$$10^2 = (2y)^2 + y^2$$

$$100 = 4y^2 + y^2$$

$$5y^2 = 100$$

$$y = \sqrt{20}$$

$$y = \sqrt{2^2 \cdot 5}$$

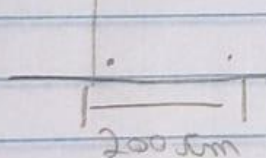
$$y = 2\sqrt{5} \text{ m} \Rightarrow \text{Situa A}$$

$$\begin{array}{r|l} 20 & 2) \\ 10 & 2) \\ 5 & 5) \\ 1 & \end{array}$$

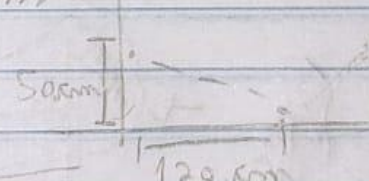
7-1)

$$\text{altura} = 16 \text{ cm}$$

$$\text{largura} = 10 \text{ cm}$$



→ 5 m



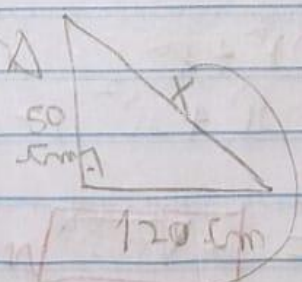
$$\Rightarrow x^2 = 120^2 + 50^2$$

$$x^2 = 14400 + 2500$$

$$x = \sqrt{16900}$$

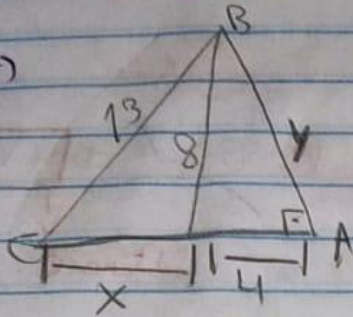
$$x = 130 \text{ cm} (= 1.3 \text{ m})$$

$$x = 1.3 \text{ m}$$



Exercícios 8, 9 e 10:

8-)



$$8^2 = y^2 + 4^2$$

$$64 = y^2 + 16$$

$$y^2 = 48$$

$$13^2 = y^2 + (x+4)^2$$

$$169 = 48 + x^2 + 16 + 8x$$

$$x^2 + 8x - 105 = 0$$

$$\frac{1}{2} + \frac{-15}{2} = -8$$

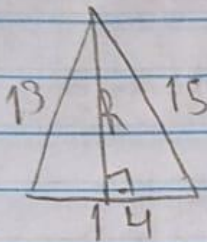
$$\frac{1}{2} \cdot \frac{-15}{2} = -105$$

$$x' = 7$$

Setor D

$$x' = 15$$

9-)



~1111
Fórmula de Heron

$$p = (13 + 14 + 15) = \frac{42}{2} = 21$$

$$A = \sqrt{21(21-13)(21-14)(21-15)}$$

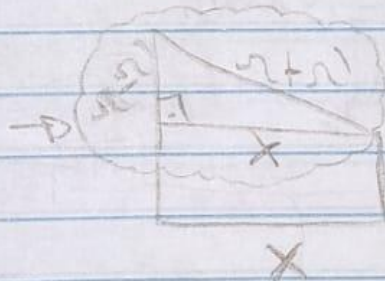
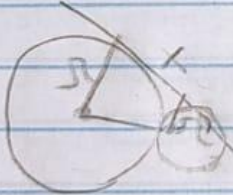
$$A = \sqrt{21 \cdot 8 \cdot 7 \cdot 6}$$

$$A = \sqrt{7056}$$

$$A = 84$$

$$84 = 7h \Rightarrow h = \frac{84}{7} \Rightarrow h = 12$$

10-)



$$(r+r')^2 = (r-r')^2 + x^2$$

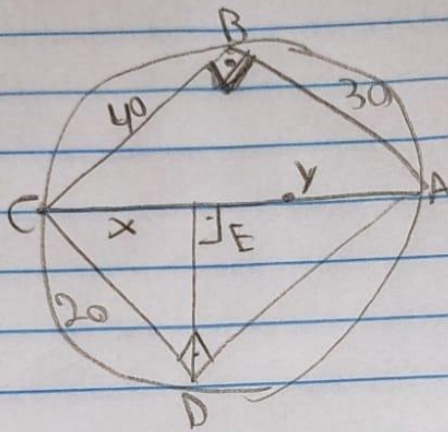
$$x^2 = (r^2 + 2rr' + r'^2) - (r^2 - 2rr' + r'^2)$$

$$x^2 = 4rr'$$

$$x = \sqrt{4rr'} = 2\sqrt{rr'}$$

Exercício 11:

11-1)

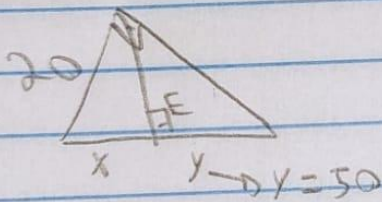


$$y^2 = 30^2 + 40^2$$

$$y^2 = 900 + 1600$$

$$y = \sqrt{2500}$$

$$\boxed{y = 50}$$



$$c^2 = a \cdot m$$

$$20^2 = 50 \cdot x$$

$$50x = 400$$

$$x = \frac{400}{50}$$

$$\boxed{x = 8 \text{ m}}$$

↳ getra C