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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:

Matemática 5 - Triângulos Retângulos

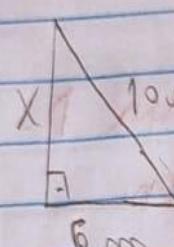
Tarefa Básica

1- $x^2 = (\sqrt{3})^2 + (\sqrt{4})^2 \rightarrow x = \sqrt{7} \rightarrow$ Seta B

$$x^2 = 3 + 4$$

~|~|~

2- $10^2 = x^2 + 6^2 \rightarrow x = \sqrt{64} \rightarrow x = 8 \text{ mm}$



$$10^2 = x^2 + 6^2$$

$$100 = x^2 + 36$$

$$x^2 = 64$$

~|~|~

3- $y^2 = 1^2 + 2^2 \rightarrow y^2 = 5$

$$3^2 = y^2 + x^2$$

$$9 = 5 + x^2$$

$$x^2 = 4$$

$$x = \sqrt{4} \rightarrow x = 2 \text{ m} \rightarrow$$
 Seta B

Baixo.

~|~|~

4- $z^2 = a^2 + a^2 \rightarrow z^2 = 2a^2$

$$y^2 = z^2 + a^2$$

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

$$y = 3a^2$$

$$x^2 = y^2 + a^2$$

$$x^2 = 4a^2$$

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

$$x = 2a \rightarrow$$
 Seta B.

~|~|~

Exercícios 5, 6 e 7:

D S T Q Q S S

$$5 \rightarrow 6^2 = 2^2 + x^2$$

$$x^2 = 32$$

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

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

$$32 | 2)$$

$$10 | 2$$

$$8 | 2)$$

$$4 | 2$$

$$2 |$$

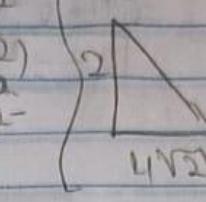
$$1$$

Então:

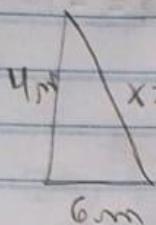
-8

$$(4\sqrt{2}) \cdot x = 4\sqrt{2} \text{ m}$$

Síntese C.



6 -

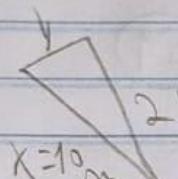


7) 111

$$x^2 = 8^2 + 6^2 \Rightarrow x = 10$$

$$x^2 = 100$$

-9



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

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

$$5y^2 = 100$$

$$y = \sqrt{20}$$

$$y = \sqrt{22.5}$$

$$y = 2\sqrt{5} \text{ m} \rightarrow \text{Síntese A}$$

$$20 | 2)$$

$$10 | 2)$$

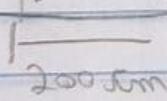
$$5 | 5$$

$$1 |$$

7 -

$$\text{arista} = 16 \text{ cm/nr}$$

$$\text{fioranga} = 10 \text{ cm/nr}$$



$\rightarrow 5 \text{ nr}$

50 cm

120 cm

-10

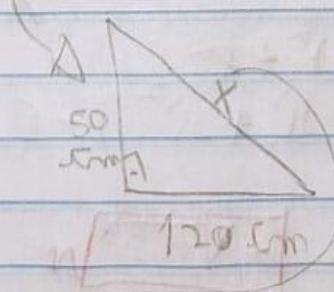
$$D X^2 = 120^2 + 50^2$$

$$x^2 = 14400 + 2500$$

$$x = \sqrt{16900}$$

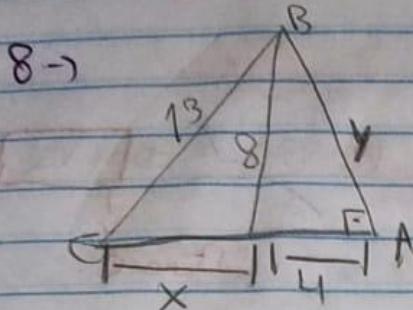
$$x = 130 \text{ cm (F.100)}$$

$$x = 1,3 \text{ m}$$



120 cm

Exercícios 8, 9 e 10:



$$\begin{aligned} 8^2 &= y^2 + 4^2 \quad | 13^2 = y^2 + (x+4)^2 \\ 64 &= y^2 + 16 \quad | 169 = y^2 + x^2 + 8x + 16 \\ y^2 &= 48 \quad | 169 = 48 + x^2 + 8x + 16 \\ x^2 + 8x - 105 &= 0 \end{aligned}$$

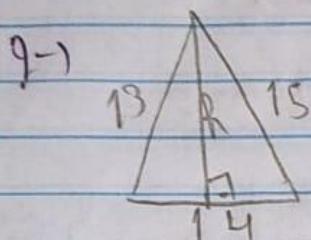
$$\frac{1}{2} + -15 = -8$$

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

$x = 7$

$$x \geq 15$$

Setor D



111
Fórmula de Heron

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

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

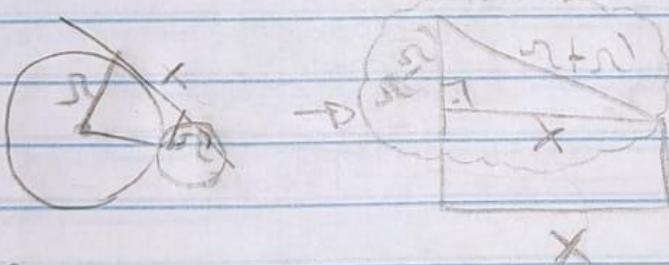
$$A = \sqrt{21 \cdot 8 \cdot 7 \cdot 6}$$

$$A = \sqrt{7056}$$

$$A = 84$$

$$\hookrightarrow 84 = 78 \Rightarrow h = \frac{84}{7} \Rightarrow h = 12$$

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

$$\begin{aligned} y^2 &= 30^2 + 40^2 \\ y^2 &= 900 + 1600 \\ y &= \sqrt{2500} \\ y &= 50 \end{aligned}$$

$$\begin{aligned} c^2 &= x \cdot m \\ 20^2 &= 50 \cdot x \\ 50x &= 400 \\ x &= 400 / 50 \\ x &= 8 \end{aligned}$$

$x = 8$ m
↳ setra C