

**1^a
SÉRIE**

CANAL SEDUC-PI1



PROFESSOR (A):



DISCIPLINA:



CONTEÚDO:



TEMA GERADOR:



DATA:

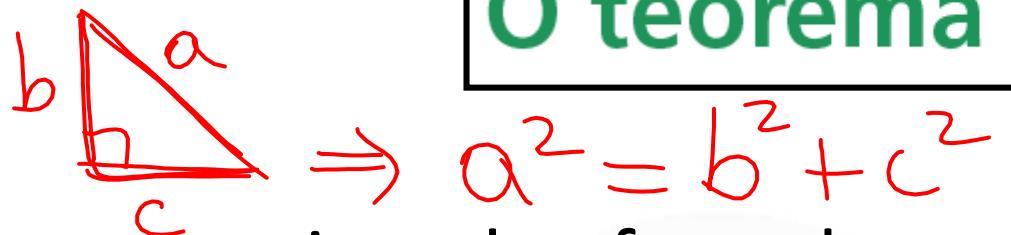
**ALEXANDRO
KESLLER**

**MATEMÁTICA
(OFICINA)**

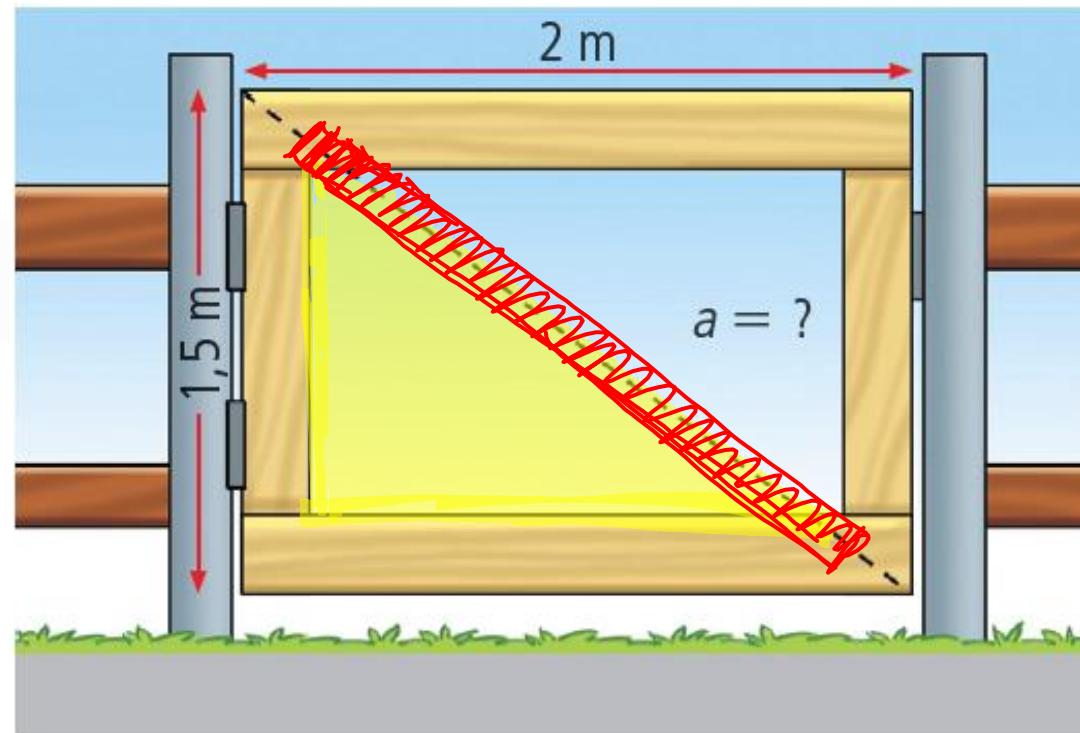
**TRIGONOMETRIA
NO
TRIÂNGULO RETÂNGULO**

**ARTE NA
ESCOLA**

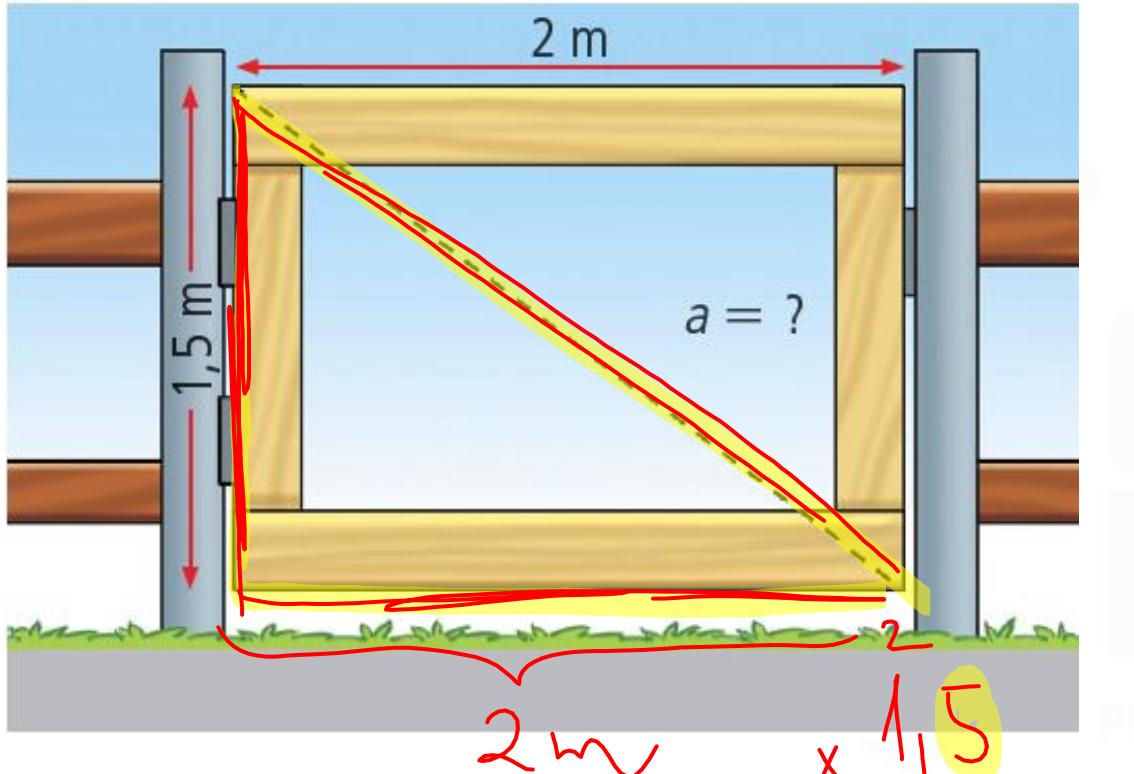
18.10.2019



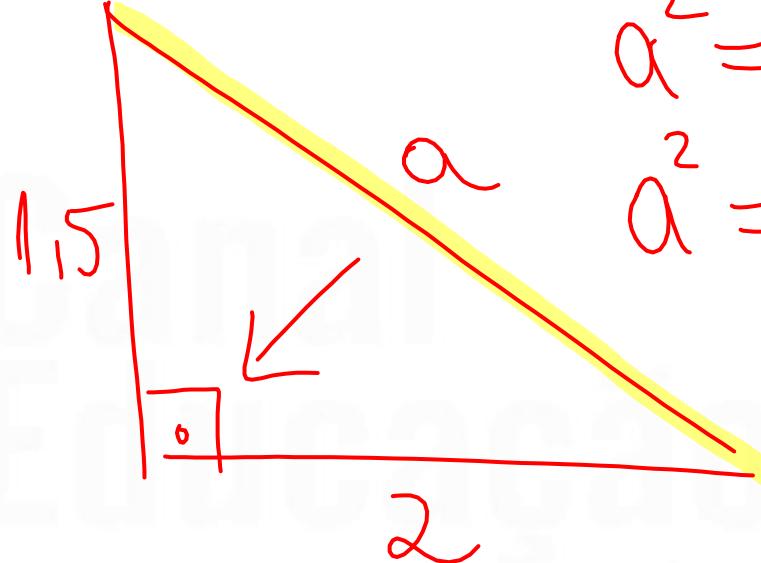
Uma porteira de fazenda terá a forma de retângulo. Para dar rigidez à estrutura, uma barra de madeira será colocada na diagonal do retângulo, como você vê no projeto do carpinteiro. Com as medidas dadas, podemos calcular o comprimento da barra usando o teorema de Pitágoras:



O teorema de Pitágoras



$$\begin{array}{r}
 1 \\
 5 \\
 \times 1 \\
 5 \\
 \hline
 7 5 \\
 5 5 \\
 \hline
 2,25
 \end{array}$$



$$a^2 = (1,5)^2 + 2^2$$

$$a^2 = 2,25 + 4$$

$$a^2 = 6,25$$

$$a = \sqrt{6,25}$$

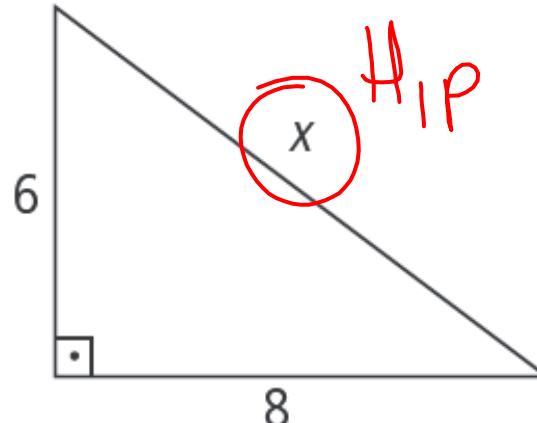
$$\underline{\underline{a = 2,5\text{ m}}}$$

Exercícios

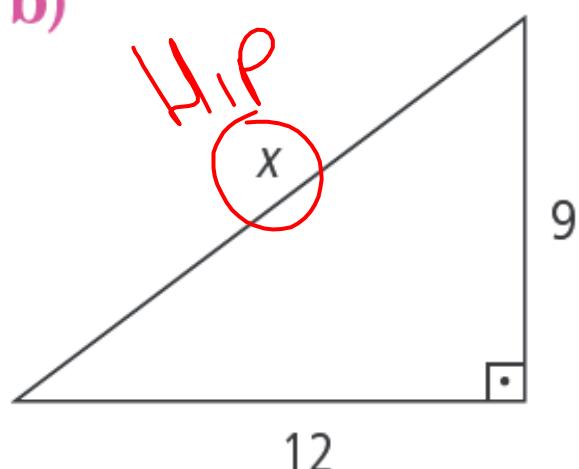
$$(H_{IP})^2 = (CAT)^2 + (eAT)^2$$

Calcule o valor de x nos triângulos retângulos.

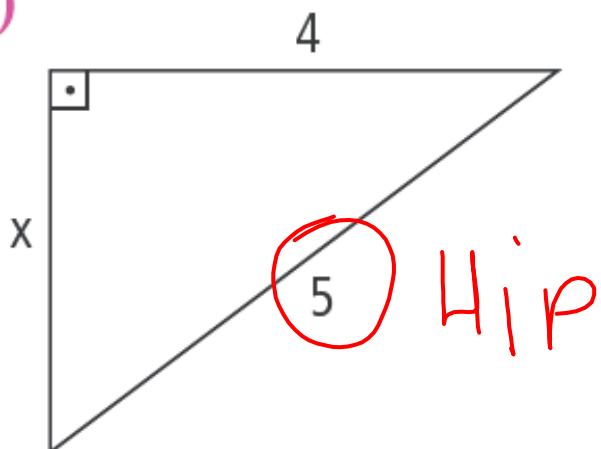
a)



b)



c)



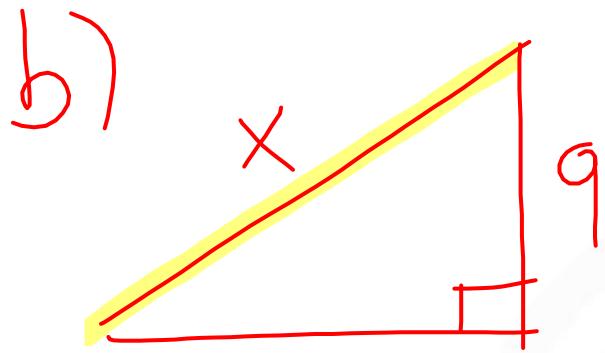
$$x^2 = 6^2 + 8^2$$

$$x^2 = 36 + 64$$

$$\rightarrow x^2 = 100$$

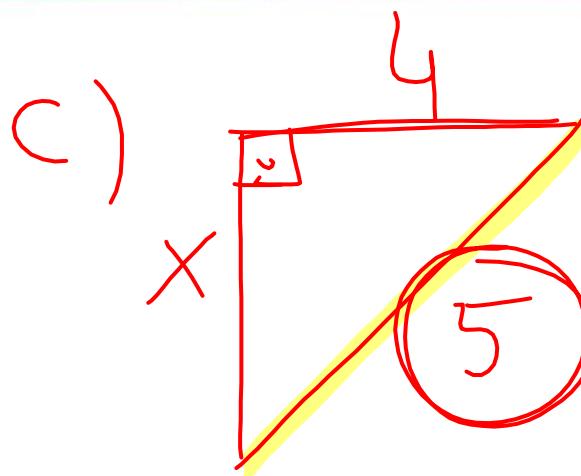
$$x = \sqrt{100}$$

$$\Rightarrow x = 10$$



$$\begin{aligned} x^2 &= 12^2 + 9^2 \\ x^2 &= 144 + 81 \\ x^2 &= 225 \end{aligned}$$

$$\begin{aligned} x &= \sqrt{225} \\ x &= 15 \end{aligned}$$



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

$$25 = x^2 + 16$$

$$x^2 = 25 - 16$$

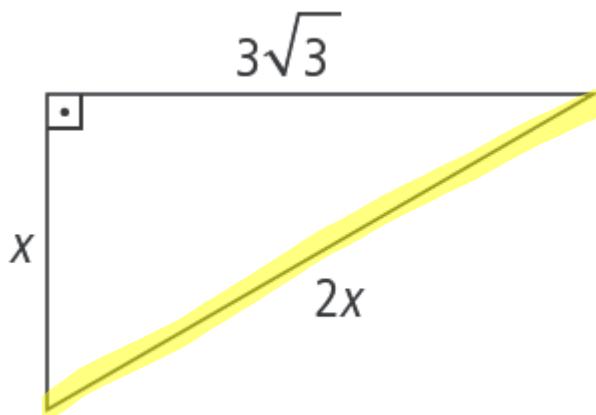
$$\begin{aligned} x^2 &= 9 \\ x &= \sqrt{9} \end{aligned}$$

$$x = 3$$

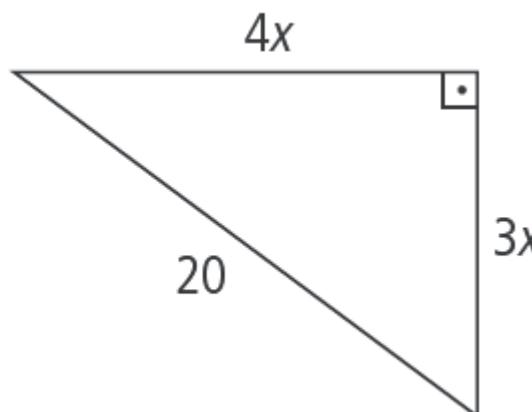
Exercícios

Calcule o valor de x nos triângulos retângulos.

a)



b)



P/cessa

$$(2x)^2 = x^2 + (3\sqrt{3})^2$$

$$4x^2 = x^2 + 9 \cdot 3$$

$$4x^2 = x^2 + 27$$

$$4x^2 - x^2 = 27$$

$$3x^2 = 27$$

$$x^2 = \frac{27}{3}$$

$$x^2 = 9$$

$$x = \sqrt{9} = \boxed{3}$$