

**1ª  
SÉRIE**

## **CANAL SEDUC-PI1**



PROFESSOR (A):

**ALEXSANDRO  
KESLLER**



DISCIPLINA:

**MATEMÁTICA  
(OFICINA)**



CONTEÚDO:

**TRIGONOMETRIA  
NO  
TRIÂNGULO RETÂNGULO**



TEMA GERADOR:

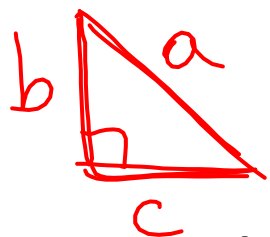
**ARTE NA  
ESCOLA**



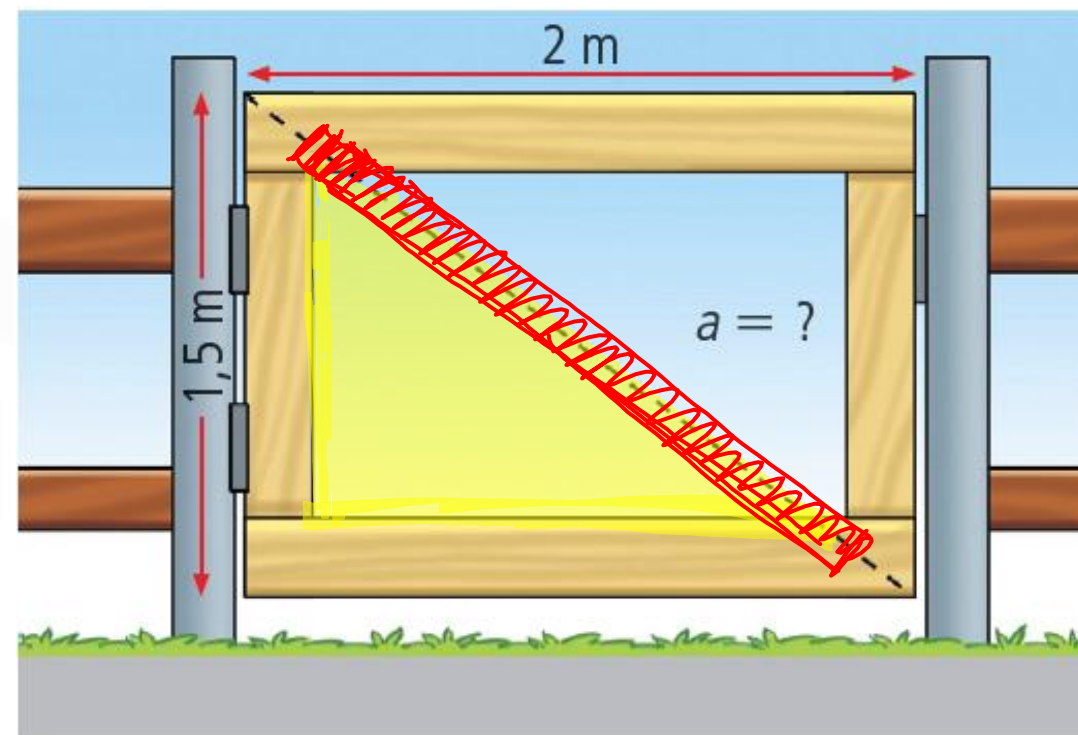
DATA:

**18.10.2019**

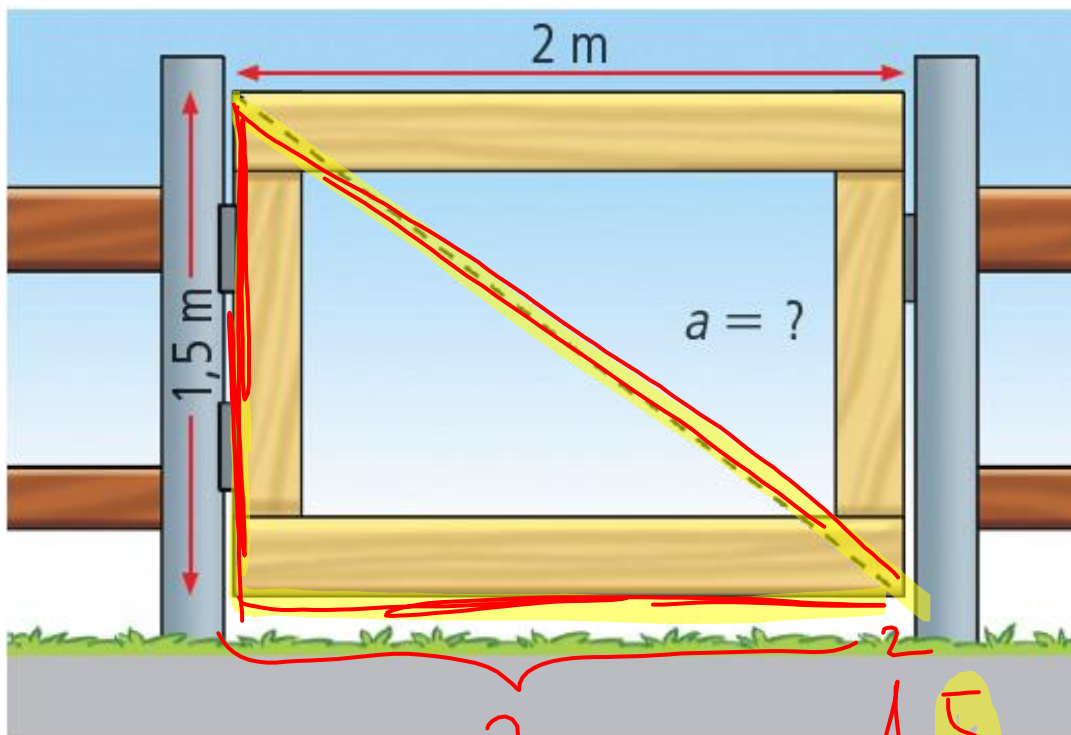
# O teorema de Pitágoras


$$\Rightarrow a^2 = b^2 + c^2$$

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



2m

$$\begin{array}{r} \times 1,5 \\ 1,5 \\ \hline 175 \\ 15 = \\ \hline 2,25 \end{array}$$

A hand-drawn right triangle with a vertical leg of 1,5, a horizontal leg of 2, and a hypotenuse labeled 'a'. A right angle symbol is shown at the vertex where the legs meet.

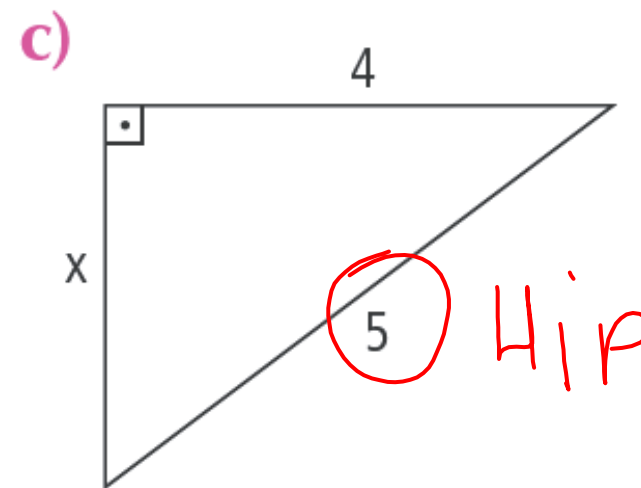
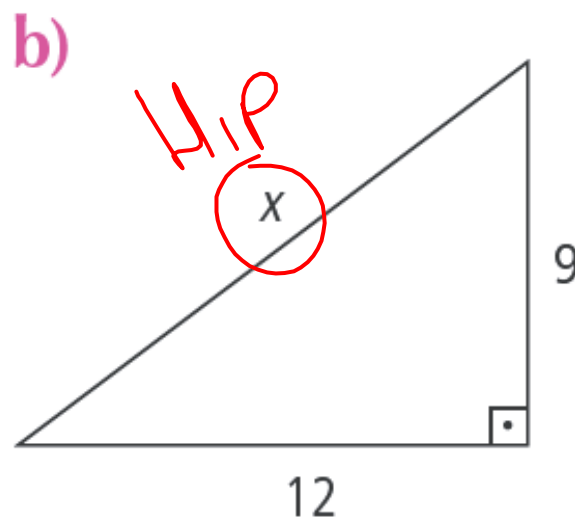
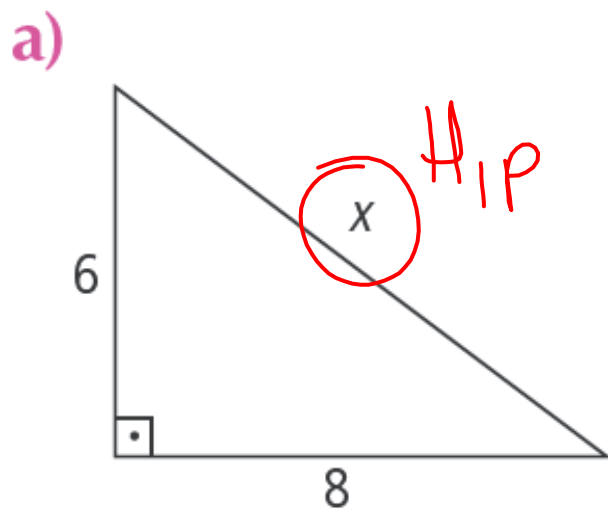
$$\begin{aligned} a^2 &= (1,5)^2 + 2^2 \\ a^2 &= 2,25 + 4 \\ a^2 &= 6,25 \\ a &= \sqrt{6,25} \end{aligned}$$

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

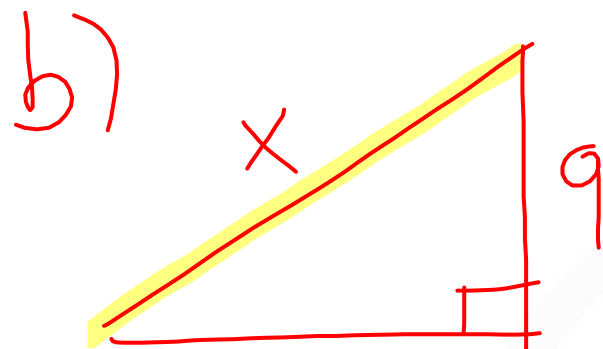
# Exercícios

$$(Hip)^2 = (CAT)^2 + (CAT)^2$$

Calcule o valor de  $x$  nos triângulos retângulos.



$$\begin{aligned} x^2 &= 6^2 + 8^2 \\ x^2 &= 36 + 64 \end{aligned} \quad \rightarrow \quad \begin{aligned} x^2 &= 100 \\ x &= \sqrt{100} \Rightarrow x = 10 \end{aligned}$$



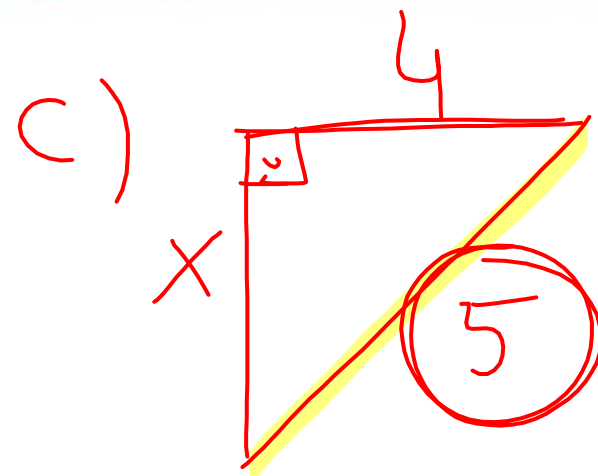
$$x^2 = 12^2 + 9^2$$

$$x^2 = 144 + 81$$

$$x^2 = 225$$

$$x = \sqrt{225}$$

$$\underline{\underline{x = 15}}$$



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

$$25 = x^2 + 16$$

$$x^2 = 25 - 16$$

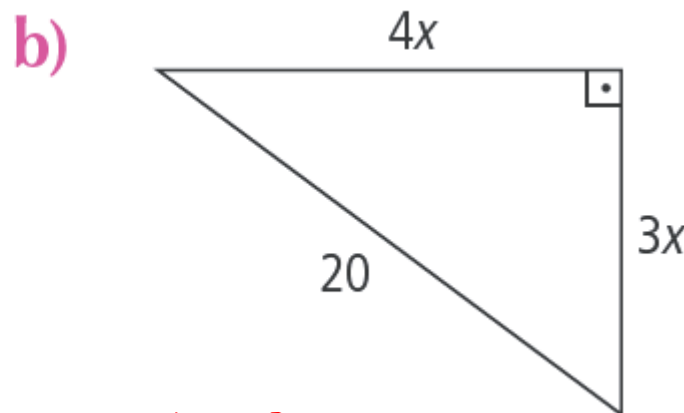
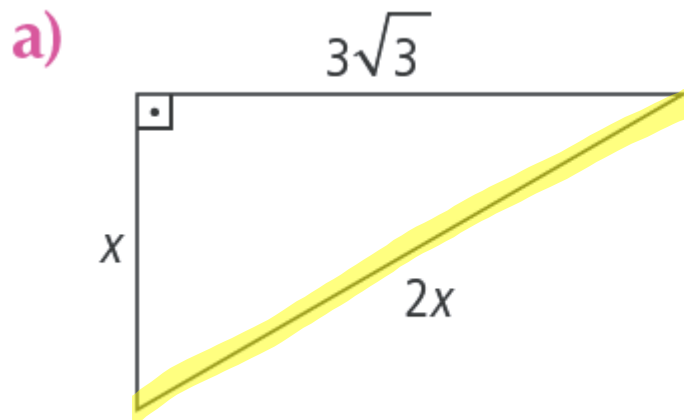
$$x^2 = 9$$

$$x = \sqrt{9}$$

$$\underline{\underline{x = 3}}$$

# Exercícios

Calcule o valor de  $x$  nos triângulos retângulos.



P/essa

$$\begin{aligned} (2x)^2 &= x^2 + (3\sqrt{3})^2 \\ 4x^2 &= x^2 + 9 \cdot 3 \\ 4x^2 &= x^2 + 27 \\ 4x^2 - x^2 &= 27 \\ 3x^2 &= 27 \end{aligned}$$

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

$$x^2 = 9$$

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