

INSTITUTO FEDERAL
São Paulo
Campus Cubatão

TAREFA BÁSICA 23: TRIÂNGULO RETÂNGULO

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Exercício 1, 2, 3 e 4:

$$\begin{aligned}\textcircled{1} \quad h^2 &= c^2 + p^2 \\ h^2 &= (C\sqrt{3})^2 + (C\sqrt{4})^2 \\ h^2 &= 3 + 4 \\ h &= \sqrt{7}\end{aligned}$$

$$\begin{aligned}\textcircled{2} \quad x^2 + 6^2 &= 10^2 \\ x^2 &= 100 - 36 \\ x &= \sqrt{64} \\ x &= 8 \text{ m}\end{aligned}$$

$$\begin{aligned}\textcircled{3} \quad (ac)^2 &= 2^2 + 1^2 & (cd)^2 &= 3^2 - (C\sqrt{5})^2 \\ (ac)^2 &= 5 & (cd)^2 &= 9 - 5 \\ ac &= \sqrt{5} & cd &= \sqrt{4} \\ & & cd &= 2\end{aligned}$$

$$\begin{aligned}\textcircled{4} \quad z^2 &= a^2 + a^2 \\ z &= \sqrt{a^2 + a^2} \\ z &= 2a \\ y^2 &= (2a)^2 + a^2 \\ y &= \sqrt{4a^2 + a^2} \\ y &= 2a + a \\ y &= 3a \\ x^2 &= 3a^2 + a^2 \\ x &= \sqrt{4a^2} \\ x &= 2a\end{aligned}$$

Exercício 5, 6 e 7:

⑤ $6^2 = 4^2 + c^2$

$36 = 16$

$36 - 16 = c^2$

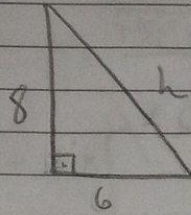
$20 = c^2$

$\sqrt{20} = c$

$\sqrt{4 \cdot 5} = c$

$2\sqrt{5} = c$

⑥



$h^2 = 8^2 + 6^2$

$h = \sqrt{100}$

$h = 10m$

$10^2 = b^2 + 2b^2$

$100 = b^2$

$\sqrt{100} = b$

$10 = b$

$10 = c^2$

$\sqrt{10} = c$

$20 = c^2$

$\sqrt{20} = c$

$2\sqrt{5} = c$

⑦

$5.16cm = 0,8m$

$2 - 0,8 = 1,2m$

$5.10 = 0,5m$

$a^2 b^2 = 1,2^2 + 0,5^2$

$ab = \sqrt{1,69}$

$ab = 1,3m$

Exercício 8, 9 e 10:

8

AB

$$8^2 = 9^2 + x^2$$

$$64 - 81 = x^2$$

$$\sqrt{18} = x$$

$$4\sqrt{3} = x$$

$$\Delta = 8^2 - 4 \cdot 1 \cdot (-105)$$

$$64 + 420$$

$$484$$

$$13^2 = (4 + x^2) + (4\sqrt{3})^2$$

$$169 = x^2 + 8x + 16 + 16 \cdot 3$$

$$169 = x^2 + 8x + 64$$

$$x^2 + 8x + 64 - 169 = 0$$

$$x^2 + 8x - 105 = 0 \quad \begin{cases} a=1 \\ b=8 \\ c=-105 \end{cases}$$

$$x = \frac{-8 \pm \sqrt{484}}{2}$$

$$x = \frac{-8 \pm 22}{2}$$

$$x' = \frac{-8 - 22}{2} = -15$$

$$x'' = \frac{-8 + 22}{2} = 7$$

-15 é impossível

7 é possível = 7m

9

$$\frac{14}{15} = \frac{3}{h}$$

$$14h = 45$$

$$148 = 14h$$

$$1342 = h$$

10 $x^2 = (n+n')^2 - (n-n')^2$

$$x^2 = (n^2 + 2nn' + n'^2) - (n^2 - 2nn' + n'^2)$$

$$x^2 = 4nn'$$

$$x = 2\sqrt{nn'}$$

Exercício 11:

⑪ $AB = 30 \mid a^2 = 40^2 + 30^2$
 $BC = 40 \mid a^2 = 1600 + 900$
 $AC = \mid a^2 = 2500$
 $ac = \sqrt{2500}$
 $ac = 50$