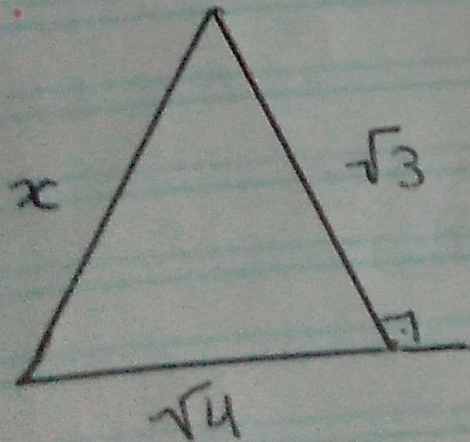


Nome: Rodrigo Moreira de Sousa Data: CTII 317

Tarefa Exercício - Triângulo Retângulo

1.



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

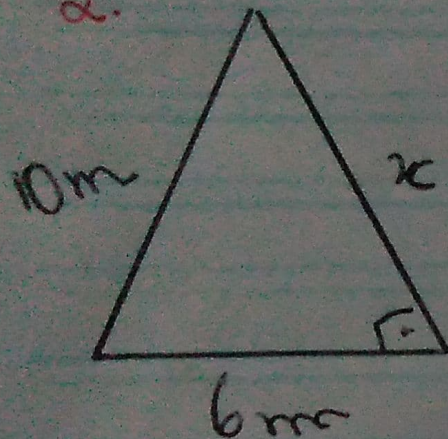
$$x^2 = 3 + 4$$

$$x^2 = 7$$

$$x = \sqrt{7}$$



2.



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

$$x^2 + 36 = 100$$

$$x^2 = 100 - 36$$

$$x^2 = 64$$

$$x = 8m$$

3.

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

$$y^2 = 4 + 9$$

$$y^2 = 13$$

$$y = \sqrt{13}$$

$$x^2 = 3^2 - (\sqrt{5})^2$$

$$x^2 = 9 - 5$$

$$x^2 = 4$$

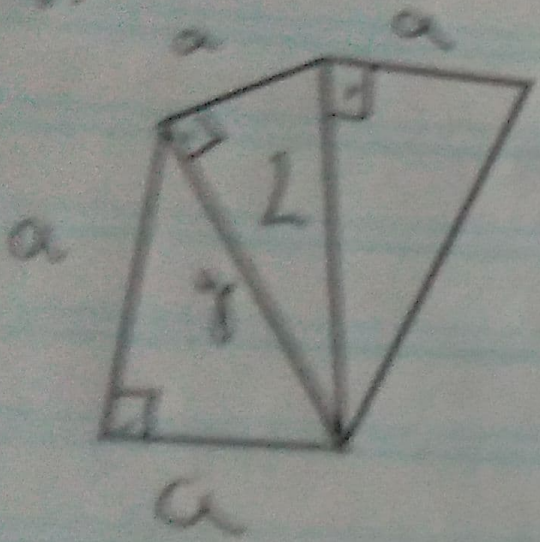
$$x = \sqrt{4}$$

$$x = 2$$



$$x = 2$$

4.



$$\begin{aligned} y^2 &= a^2 + a^2 \\ y^2 &= 2a^2 \\ y &= a\sqrt{2} \end{aligned}$$

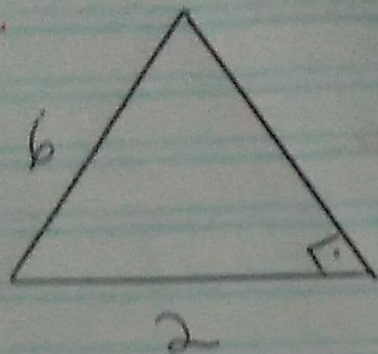
$$\begin{aligned} x^2 &= a^2 + (a\sqrt{3})^2 \\ x^2 &= a^2 + 3a^2 \\ x^2 &= 4a^2 \\ x &= \sqrt{4a^2} \\ x &= 2a \end{aligned}$$

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

$$\begin{aligned} x &= \sqrt{4a^2} \\ x &= 2a \end{aligned}$$



5.



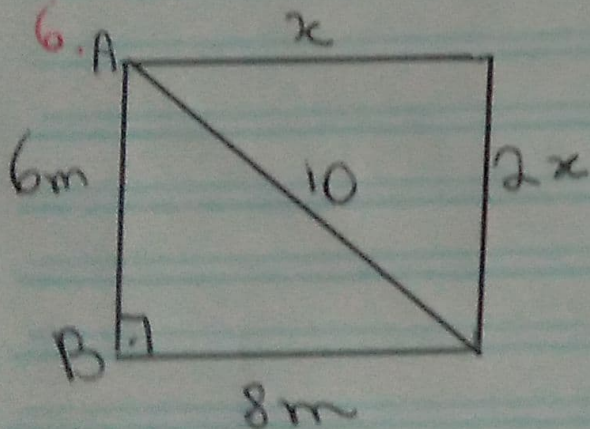
$$\begin{aligned}
 6^2 &= 2^2 + x^2 \\
 36 &= 4 + x^2 \\
 36 - 4 &= x^2 \\
 32 &= x^2 \\
 32 &= x
 \end{aligned}$$

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

$$4\sqrt{2}$$

$$\text{Area} = \frac{b \cdot h}{2} = \frac{2 \cdot (4\sqrt{2})}{2} = \frac{8\sqrt{2}}{2} = \boxed{4\sqrt{2}}$$

6.



$$\begin{aligned}
 10^2 &= x^2 + (2x)^2 \\
 100 &= 5x^2 \\
 x &= \sqrt{20} \\
 \boxed{x} &= \boxed{2\sqrt{5}}
 \end{aligned}$$

R: a)

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

7.

Após 5 segundos do início do movimento



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

$$x^2 = 36 + 64$$

$$x^2 = 100$$

$$x = 10$$

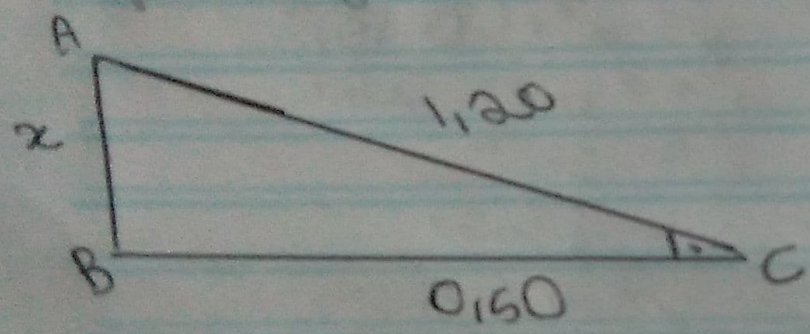
7.

Após 5 segundos do início do movimento

$$\text{arresta } 5 \cdot 16 \text{ cm} = 80 \text{ cm} = 0,80 \text{ m}$$

$$2,00 \text{ m} - 0,80 \text{ m} = 1,20 \text{ m}$$

formiga:  $5 \cdot 10 \text{ cm} = 50 \text{ cm} = 0,50 \text{ m}$



$$x^2 = 1,20^2 + 0,50^2$$

$$x^2 = 1,44 + 0,25$$

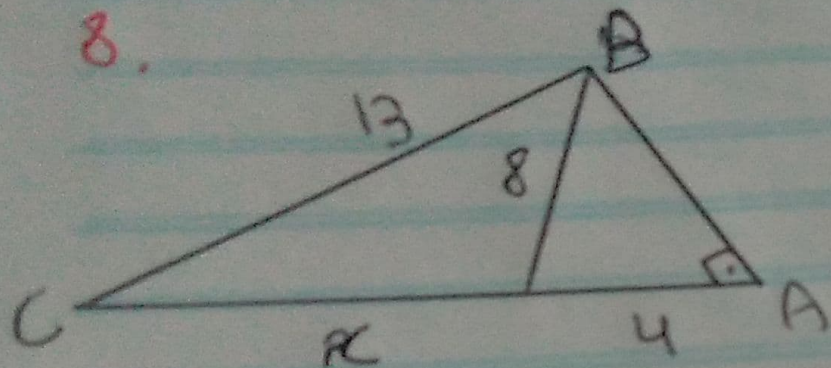
$$x^2 = 1,69$$

$$x = \sqrt{1,69}$$

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



8.



$$\begin{aligned}
 13^2 &= (4+x)^2 + (4\sqrt{3})^2 \\
 169 &= 16 + 8x + x^2 + 48 \\
 169 &= 64 + 8x + x^2 \\
 x^2 + 8x + 64 &= 169 \\
 x^2 + 8x + 64 - 169 &= 0
 \end{aligned}$$

$$8^2 = 4^2 + x^2$$

$$64 = 16 + x^2$$

$$64 - 16 = x^2$$

$$48 = x^2$$

$$\sqrt{48} = x$$

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

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

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

$$\Delta = 64 + 420$$

$$\Delta = 484$$

$$x = \frac{-8 \pm \sqrt{484}}{2 \cdot 1}$$

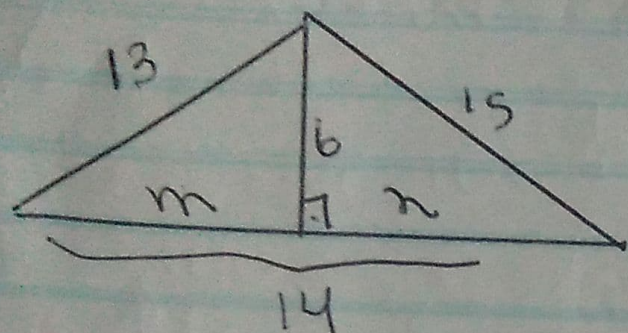
$$x' = \frac{-8 - 22}{2} = -15$$

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

$x = 7 \text{ m}$



9.



$$n + m = 14$$

$$n - m = 4$$

$$2n = 18$$

$$n = \frac{18}{2} = 9$$

$$15^2 = h^2 + n^2$$

$$13^2 = h^2 + m^2$$

$$225 - 169 = n^2 - m^2$$

$$15^2 = h^2 + n^2$$

$$15^2 = h^2 + 9^2$$

$$h^2 = 225 - 81$$

$$h = \sqrt{144}$$

$$\boxed{h = 12}$$

$$n + m = 14$$

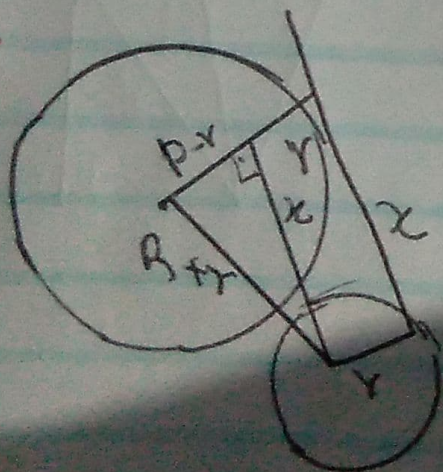
$$225 - 169 = n^2 - m^2$$

$$56 = (n+m)(n-m)$$

$$56 = 14 \cdot (n-m)$$

$$n - m = \frac{56}{14} = 4$$

10.



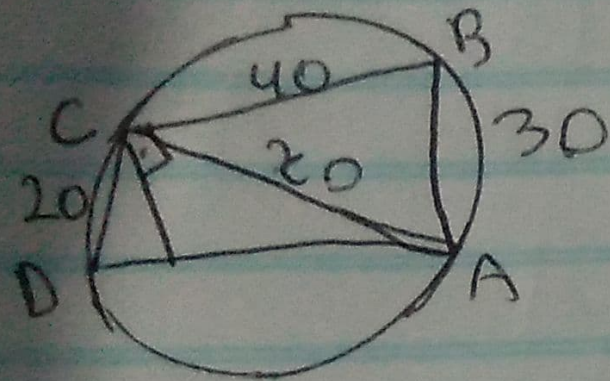
$$(R+r)^2 = (R-r)^2 + x^2$$

$$x^2 = (2R) \cdot (2r)$$

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



11.



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

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

$$400 = 50n$$

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

$$n = 8$$

$$x^2 = 40^2 + 30^2$$

$$x^2 = 1600 + 900$$

$$x^2 = \sqrt{2500}$$

$$x = 50$$

hipotenusa de  
 $\triangle ABC$