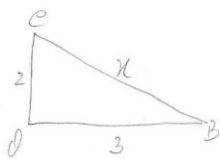


Ficha de trabalho - 8.º ano - Teorema de Pitágoras

①

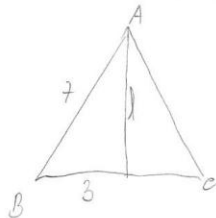


$$x^2 = 2^2 + 3^2$$

$$\Rightarrow x^2 = 13$$

$$\Rightarrow x = \sqrt{13} \quad (A)$$

②



$$x^2 + 3^2 = 7^2$$

$$\Rightarrow x^2 = 7^2 - 3^2$$

$$\Rightarrow x^2 = 40$$

$$\Rightarrow x = \sqrt{40} \quad (C)$$

③



$$x^2 + 2,5^2 = 7^2$$

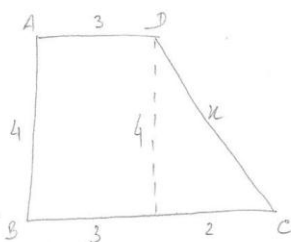
$$\Rightarrow x^2 = 7^2 - 2,5^2$$

$$\Rightarrow x^2 = 42,75$$

$$\Rightarrow x = \sqrt{42,75}$$

$$A = \frac{b \times h}{2} = \frac{5 \times \sqrt{42,75}}{2} \approx 16 \text{ m}^2$$

④



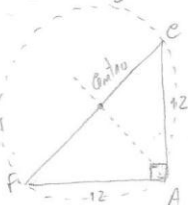
$$x^2 = 2^2 + 4^2$$

$$\Rightarrow x^2 = 20$$

$$\Rightarrow x = \sqrt{20}$$

$$P = 3 + 4 + 2 + \sqrt{20} \approx 16,5 \quad (B)$$

⑤



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

$$\Rightarrow x^2 = 288$$

$$\Rightarrow x = \sqrt{288}$$

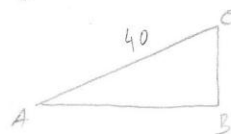
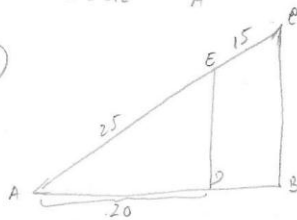
$$r_{\text{circ}} = \frac{\sqrt{288}}{2}$$

$$P = 2\pi r =$$

$$= \frac{2\pi \times \sqrt{288}}{2}$$

$$\approx 53 \text{ cm}$$

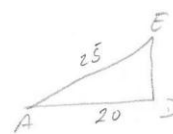
⑥



$$\frac{40}{25} = \frac{20}{x}$$

$$\Rightarrow x = 12,5$$

$$\Rightarrow BE = 12,5$$



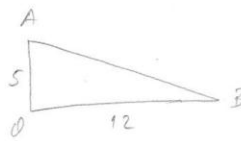
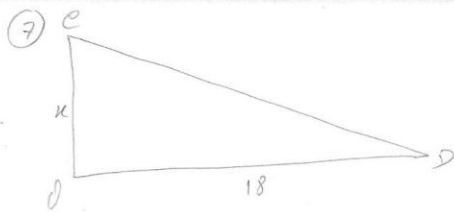
$$x^2 + 32^2 = 40^2$$

$$\Rightarrow x^2 = 40^2 - 32^2$$

$$\Rightarrow x^2 = 576$$

$$\Rightarrow x = \sqrt{576}$$

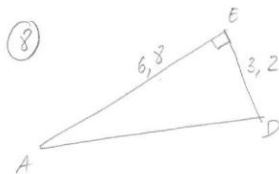
$$\Rightarrow x = 24$$



$$\begin{array}{l} 18 \text{ --- } 12 \\ x \text{ --- } 5 \end{array} \quad \left\{ \begin{array}{l} \overline{CD}^2 = 7,5^2 + 18^2 \\ \overline{CD}^2 = 380,25 \\ \overline{CD} = \sqrt{380,25} \\ \overline{CD} = 19,5 \end{array} \right.$$

$$x = \frac{5 \times 18}{12}$$

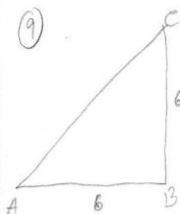
$$\Rightarrow x = 7,5$$



$$\begin{array}{l} \overline{AD}^2 = 6,8^2 + 3,2^2 \\ \overline{AD}^2 = 56,48 \\ \overline{AD} = \sqrt{56,48} \\ \overline{AD} \approx 7,515 \end{array}$$

$$r = \frac{\overline{AD}}{2} = 3,758$$

$$P_O = 2\pi r = 2\pi \times 3,758 \approx \underline{\underline{23,6 \text{ cm}}}$$



$$\begin{array}{l} \overline{AC}^2 = 6^2 + 6^2 \\ \overline{AC}^2 = 72 \\ \overline{AC} = \sqrt{72} \end{array} \quad \left\{ \begin{array}{l} r = \frac{\sqrt{72}}{2} \\ P_O = 2\pi r = \frac{2\pi\sqrt{72}}{2} \approx \underline{\underline{26,7}} \end{array} \right.$$

10

$$\overline{AB}^2 + \overline{BC}^2 = \overline{AC}^2$$

$$5^2 + 12^2 = 13^2 \quad (3)$$

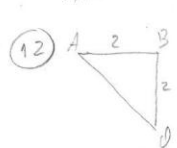
$$169 = 169$$

11

$$\overline{AC}^2 = 2^2 + 4^2 \quad E \approx 1$$

$$\Rightarrow \overline{AC}^2 = 20$$

$$\Rightarrow \overline{AC} = \sqrt{20}$$



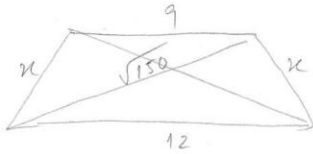
$$\begin{array}{l} \overline{AO}^2 = 2^2 + 2^2 \\ \overline{AO}^2 = 8 \\ \overline{AO} = \sqrt{8} \end{array}$$

$$\overline{IO} = \overline{AO} + \overline{IA} =$$

$$= \sqrt{8} + 2 =$$

$$\approx \underline{\underline{4,8}}$$

(13)



$$9 \times 12 + x \times x = \sqrt{150} \times \sqrt{150}$$

$$\Rightarrow 108 + x^2 = 150$$

$$\Rightarrow x^2 = 150 - 108$$

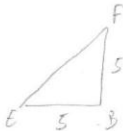
$$\Rightarrow x = \sqrt{42}$$

(14)

$$30^2 = 21^2 + 28^2$$

900 = 1225 Falso, logo o triângulo não é retângulo

(15)



$$\overline{EF}^2 = 5^2 + 5^2$$

$$\Rightarrow \overline{EF}^2 = 50$$

$$\Rightarrow \overline{EF} = \sqrt{50}$$

$$\Rightarrow \overline{EF} \approx 7,1$$

(16)



$$x^2 + x^2 = 2^2$$

$$\Rightarrow 2x^2 = 4$$

$$\Rightarrow x^2 = 2$$

$$\Rightarrow x = \sqrt{2} \text{ cm}$$

(17)



$$\overline{DE}^2 + 3,2^2 = 6,8^2$$

$$\Rightarrow \overline{DE}^2 + 6,8^2 - 3,2^2$$

$$\Rightarrow \overline{DE}^2 = 36$$

$$\Rightarrow \overline{DE} = \sqrt{36}$$

$$\Rightarrow \overline{DE} = 6$$

$$\overline{DE} + \overline{ED} = \overline{AD}$$

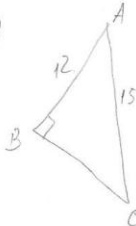
$$\Rightarrow 6 + \overline{ED} = 6,8$$

$$\Rightarrow \overline{ED} = 6,8 - 6$$

$$\Rightarrow \overline{ED} = 0,8 \text{ cm}$$

Substitua-se por $\overline{AD} = \overline{OA} = 6,8$

(18)



$$\overline{BC}^2 + 12^2 = 15^2$$

$$\Rightarrow \overline{BC}^2 = 15^2 - 12^2$$

$$\Rightarrow \overline{BC}^2 = 81$$

$$\Rightarrow \overline{BC} = \sqrt{81}$$

$$\Rightarrow \overline{BC} = 9$$

$$A_{\text{triângulo}} = \frac{b \times h}{2} =$$

$$= \frac{12 \times 9}{2}$$

$$= 54$$

$$A_{\text{círculo}} = \pi r^2 =$$

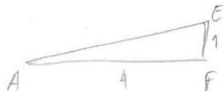
$$= \pi \times 7,5^2$$

$$A_{\text{segmento}} = A_{\text{O}} - A_{\text{D}} =$$

$$= \pi \times 7,5^2 - 54$$

$$\approx 123$$

(19)



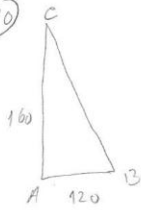
$$\overline{AE}^2 = 1^2 + 4^2$$

$$\Rightarrow \overline{AE}^2 = 17$$

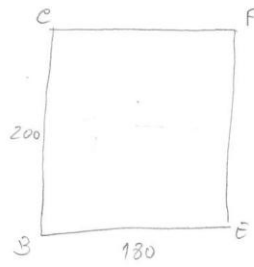
$$\Rightarrow \overline{AE} = \sqrt{17}$$

$$\Rightarrow \overline{AE} \approx 4,1$$

20

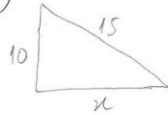


$$\begin{aligned} \overline{BC}^2 &= 160^2 + 120^2 \\ \Rightarrow \overline{BC}^2 &= 40.000 \\ \Rightarrow \overline{BC} &= \sqrt{40.000} \\ \Rightarrow \overline{BC} &= 200 \end{aligned}$$



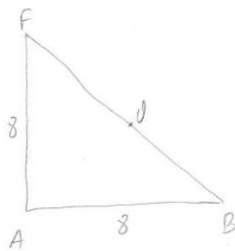
$$\begin{aligned} A &= 180 \times 200 \\ &= \underline{\underline{36.000 \text{ cm}^2}} \end{aligned}$$

21



$$\begin{aligned} x^2 + 10^2 &= 15^2 \\ \Rightarrow x^2 &= 15^2 - 10^2 \\ \Rightarrow x^2 &= 125 \\ \Rightarrow x &= \underline{\underline{\sqrt{125} \text{ cm}}} \end{aligned}$$

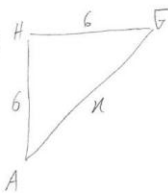
22



$$\begin{aligned} \overline{FB}^2 &= 8^2 + 8^2 \\ \Rightarrow \overline{FB}^2 &= 128 \\ \Rightarrow \overline{FB} &= \sqrt{128} \end{aligned}$$

$$\overline{JB} = \frac{\overline{FB}}{2} = \frac{\sqrt{128}}{2} \approx \underline{\underline{5,7}}$$

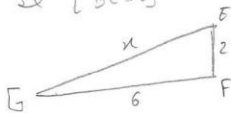
23



$$\begin{aligned} x^2 &= 6^2 + 6^2 \\ \Rightarrow x^2 &= 72 \\ \Rightarrow x &= \sqrt{72} \\ \Rightarrow x &\approx \underline{\underline{8,5}} \end{aligned}$$

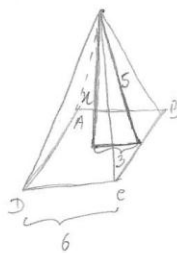
24

Se $[ABFG]$ é um quadrado de área 36, então $\overline{GF} = 6$ e $\overline{BF} = 6$
 Se $[BCDE]$ " " " " " 64, então $\overline{BE} = 8$. Logo $\overline{FE} = 8 - 6 = 2$



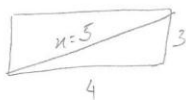
$$\begin{aligned} x^2 &= 2^2 + 6^2 \\ \Rightarrow x^2 &= 40 \\ \Rightarrow x &= \underline{\underline{\sqrt{40}}} \end{aligned}$$

25



$$\begin{aligned} x^2 + 3^2 &= 5^2 \\ \Rightarrow x^2 &= 5^2 - 3^2 \\ \Rightarrow x^2 &= 16 \\ \Rightarrow x &= \sqrt{16} \\ \Rightarrow x &= \underline{\underline{4}} \end{aligned}$$

26

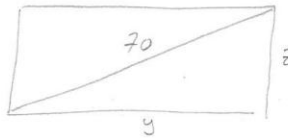


$$x^2 = 3^2 + 4^2$$

$$\Rightarrow x^2 = 25$$

$$\Rightarrow x = \sqrt{25}$$

$$\Rightarrow x = 5$$



$$5 - 70$$

$$4 - y$$

$$y = \frac{4 \times 70}{5}$$

$$y = 56 \text{ cm}$$

$$\text{Comprimento} = \underline{\underline{56 \text{ cm}}}$$

$$5 - 70$$

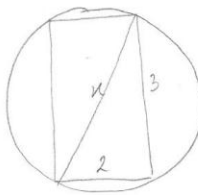
$$3 - z$$

$$z = \frac{3 \times 70}{5}$$

$$z = 42 \text{ cm}$$

$$\text{Largura} = \underline{\underline{42 \text{ cm}}}$$

27



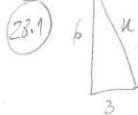
$$x^2 = 2^2 + 3^2$$

$$\Rightarrow x^2 = 13$$

$$\Rightarrow x = \sqrt{13}$$

$$\text{Diâmetro} = \underline{\underline{\sqrt{13} \text{ cm}}}$$

28



$$x^2 = 6^2 + 3^2$$

$$\Rightarrow x^2 = 45$$

$$\Rightarrow x = \sqrt{45}$$

(A) Perpendem corretamente

28.2

(B) 5

A hipotenusa não poderia ser menor que um cateto

(C) 10

$$10^2 \neq 6^2 + 3^2$$

29



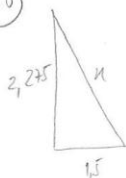
$$h^2 = 36^2 + 9.6^2$$

$$\Rightarrow h^2 = 1388.16$$

$$\Rightarrow h = \sqrt{1388.16}$$

$$\Rightarrow h \approx \underline{\underline{37 \text{ m}}}$$

30



$$x^2 = 2.275^2 + 1.5^2$$

$$\Rightarrow x^2 = 7.425625$$

$$\Rightarrow x = \sqrt{7.425625}$$

$$\Rightarrow x = 2.725$$

$$\text{Altura do bambu} = 2.275 + 2.725 =$$

$$= \underline{\underline{5 \text{ m}}}$$