1.

a) $\frac{36\,m^2}{400p} = 0{,}09\,m^2$ por peça

b) Se cada peça é um quadrado, então

$A_{QUA} = \ell^2 \rightarrow \ell^2 = 0{,}09$

$A_{QUA} = 0{,}09$

$\ell = \sqrt{0{,}09} = \sqrt{\frac{9}{100}}$

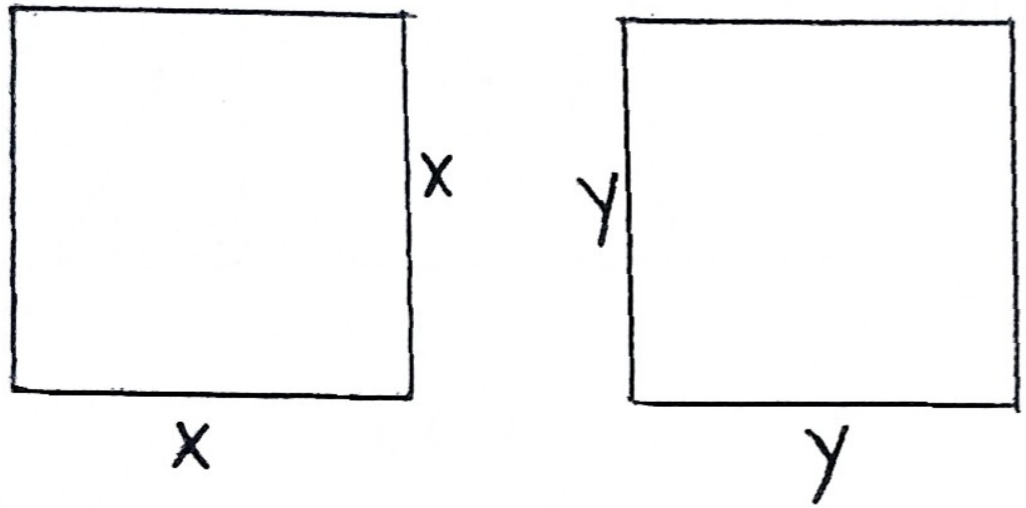
$\ell = \frac{3}{10} = 0{,}3\,m$

$P = 0{,}3 \cdot 4$

$P = 1{,}2\,m$

Então o perímetro de cada peça é igua a 1,2 m

2.



$Q(x, x)$

$R(y, y)$ $\quad A_R = y \cdot y = y^2$

$A_Q = x \cdot x = x^2$

$A_R = 2 \cdot A_Q$

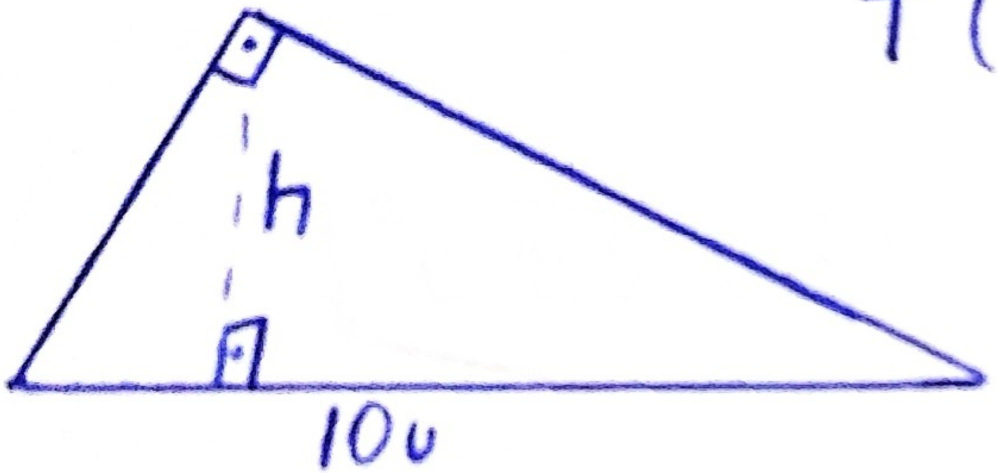
$y^2 = 2 \cdot x^2$

1

$y = \sqrt{2 \cdot x^2}$

$y = \sqrt{2} \cdot x$

3.



$T(b, h)$

$A_T = 15u$

Área de um triângulo

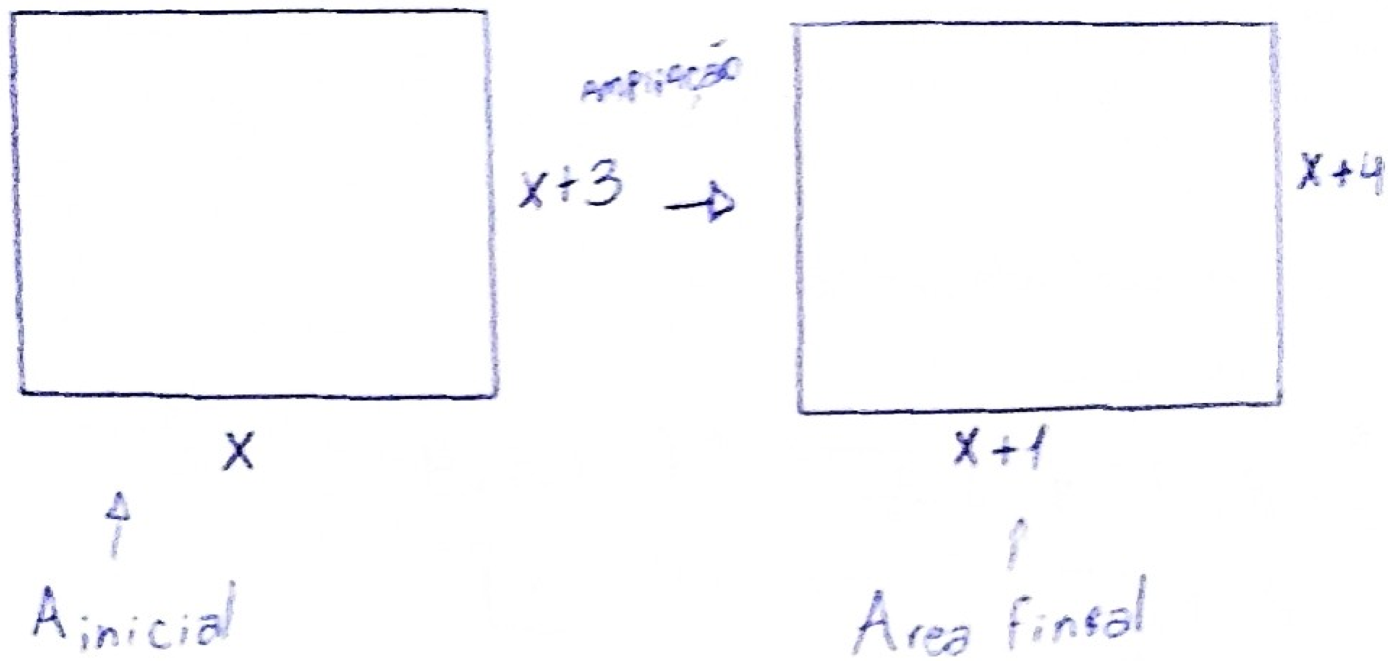
$$A_T = \frac{b \cdot h}{2}$$

$$15 = \frac{10 \cdot h}{2}$$

$$h = \frac{30}{10} = 3u$$

D

4



$A_{final} = A_{inicia} + 16m^2 \rightarrow A_{final} = (6+1).(6+4)$

$A_{final} - A_{inicial} = 16m^2$

$A_{final} = 7.10 = 70\,m^2$

$(x+1).(x+4) - (x.(x+3)) = 16$

$(x^2 + 4x + x + 4) - (x^2 + 3x) = 16$

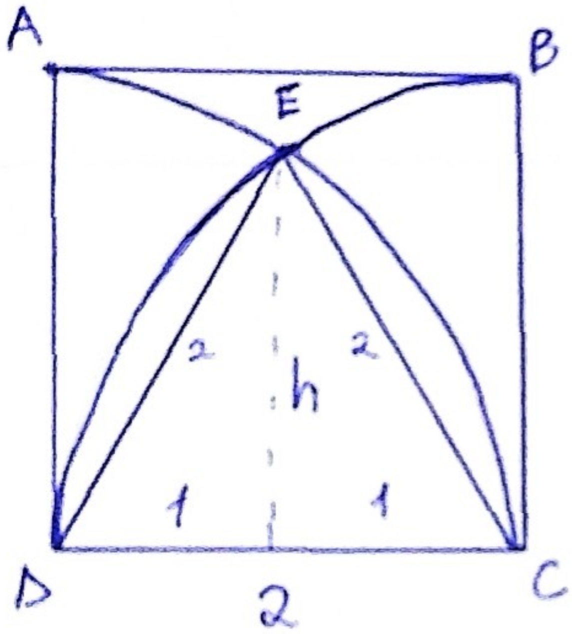
$\cancel{x^2} + 5x + 4 - x^2 - 3x = 16$

$5x - 3x + 4 = 16$

$2x = 12$

$x = 6$

5



$\overline{AD} = \overline{BC} = \overline{CD} = \overline{DE} = \overline{EC} = \text{raio} = 2$

Então

ΔDCE é ~~um~~ equilátero

Para descobria a altura h:

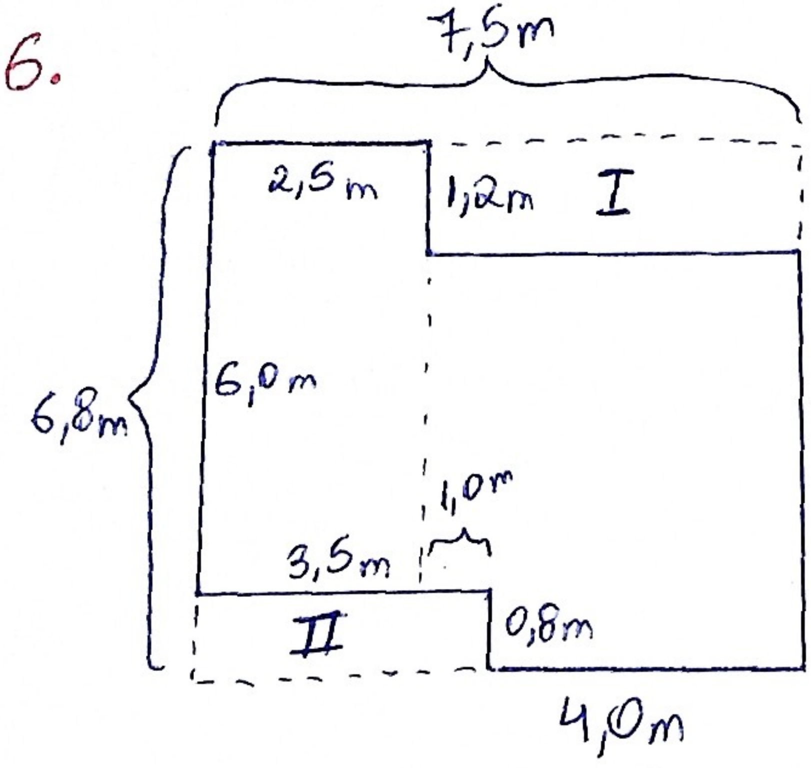
$2^2 = h^2 + 1^2$

$h = \sqrt{3}$

$A_T = \dfrac{2 \cdot \sqrt{3}}{2} = \sqrt{3}\ u^2$

B

6.



$$\text{Área I} = (4{,}0+1{,}0)\cdot 1{,}2 = 6{,}0\ m^2$$

$$\text{Área II} = 3{,}5 \cdot 0{,}8 = 2{,}8\ m^2$$

$$\text{Área da sala} = \overset{h}{(6{,}0+0{,}8)} \cdot \overset{b}{(3{,}5+4{,}0)} - \text{Á.I} - \text{Á.II}$$

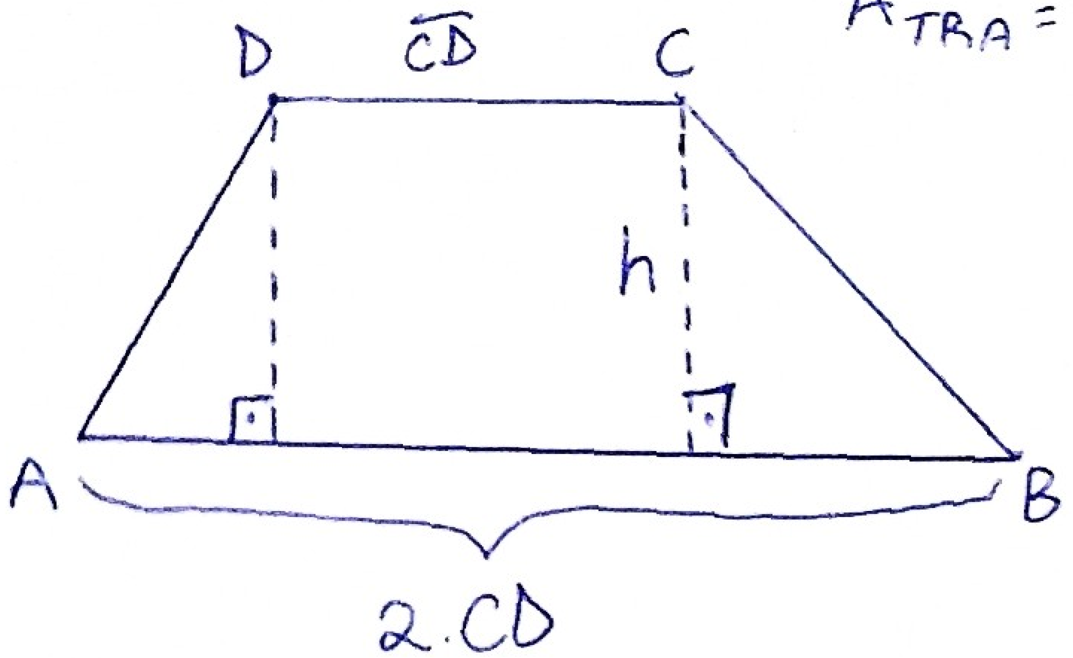
$$A\,\text{sala} = 51 - 6{,}0 - 2{,}8$$

$$A\,\text{sala} = \boxed{42{,}2\ m^2}$$

E

7.

$A_{TRA} = 36\ cm^2$



$$A_{TRA} = \frac{(B+b).h}{2}$$

$$36 = \frac{(2.\overline{CD} + \overline{CD}).h}{2}$$

$$3.\overline{CD}.h = 72$$

$$h = \frac{24}{\overline{CD}}$$

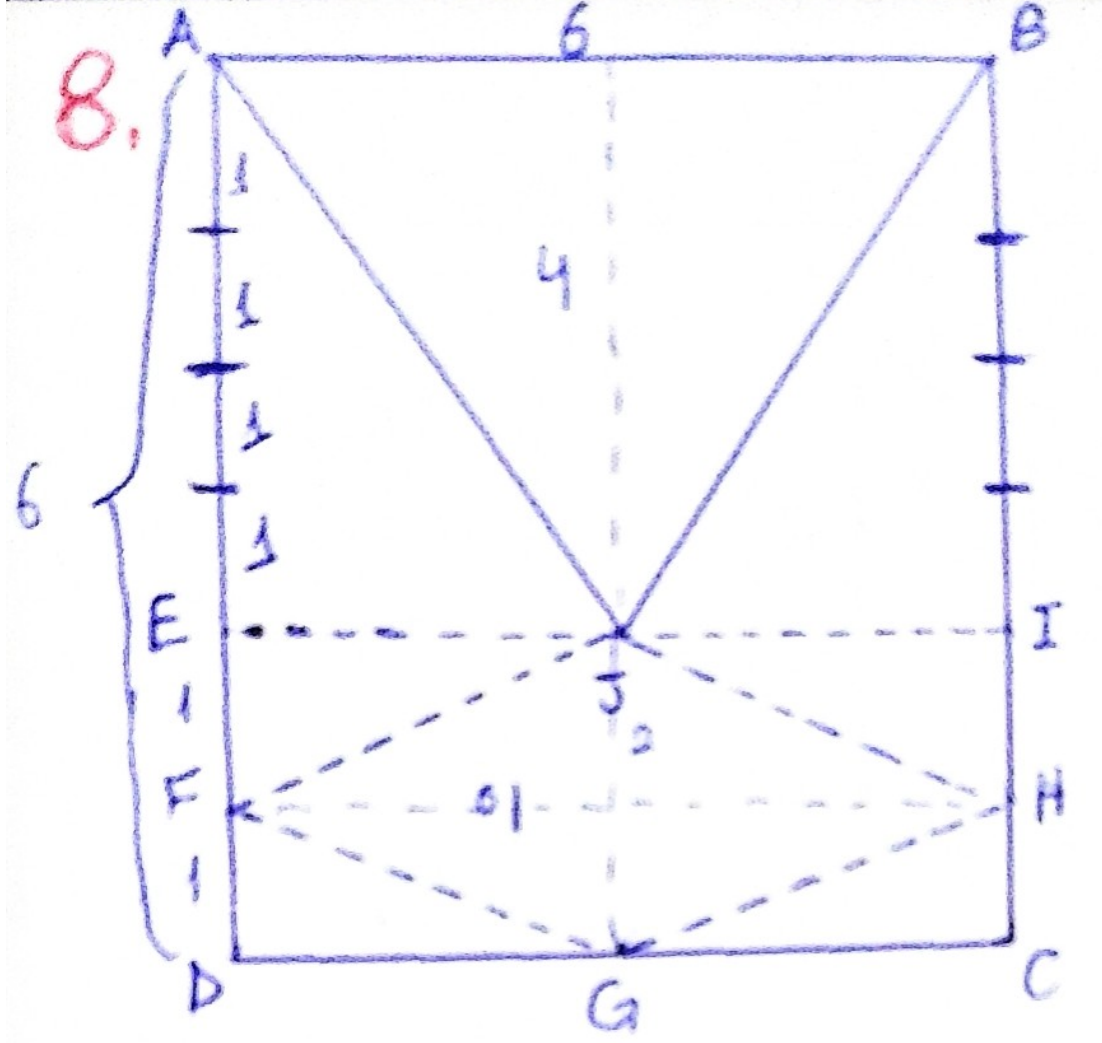
$$A_{CDEF} = b.h$$

$$A_{CDEF} = \cancel{\overline{CD}}^{\,1} . \frac{24}{\cancel{\overline{CD}}}$$

$$A_{CDEF} = 24\ cm^2$$

E

8.



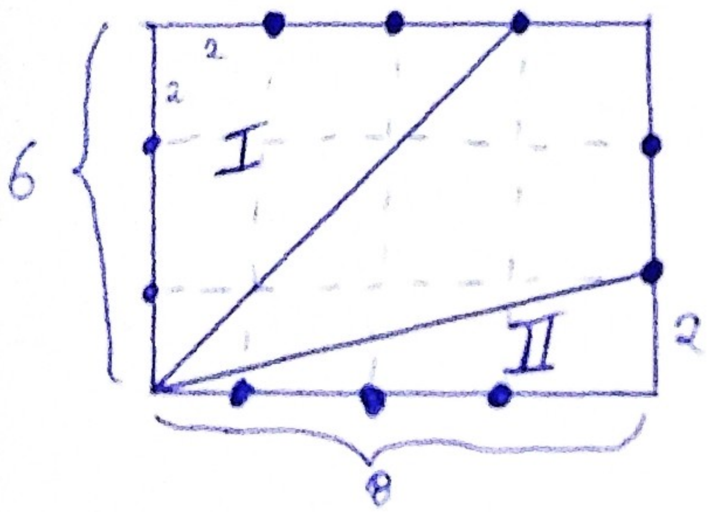
$$\frac{A_{losango}}{A_{TRIangulo}} = \frac{6}{12} = \frac{1}{2}$$

D

$$A_{losango} = \frac{D.d}{2} = \frac{6.\cancel{2}}{\cancel{2}} = 6\ cm^2$$

$$A_{triângulo} = \frac{b.h}{2} = \frac{6.\cancel{4}^{\,2}}{\cancel{2}} = 12\ cm^2$$

9.



$A = 48\ u^2$

Área de cada parte

$\frac{48\ u^2}{12 \text{ partes}} = 4u^2$ ou seja, possui 2u cada lado

Área I $= \frac{6 \cdot 6}{2} = 18\ u^2$

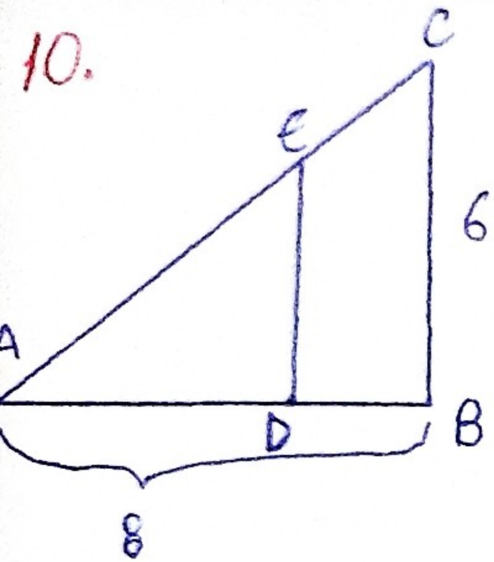
Área II $= \frac{8 \cdot \cancel{2}^1}{\cancel{2}} = 8\ u^2$

Área destacada

Área d $= 48 - 18 - 8$ E

Área d $= 22\ u^2$

10.



$$A_{ADE} = \frac{A_{ABC}}{2} = \frac{24}{2} = 12$$

$$\Rightarrow \frac{\overline{AD}}{\overline{AB}} = \frac{\overline{DE}}{\overline{BC}} \to 6.\overline{AD} = 8.\overline{DE}$$

$$\overline{DE} = \frac{6.\overline{AD}}{8} = \frac{3\overline{AD}}{4}$$

$$A_{ABC} = \frac{6.8}{2} = 24$$

$$A_{ADE} = 12$$

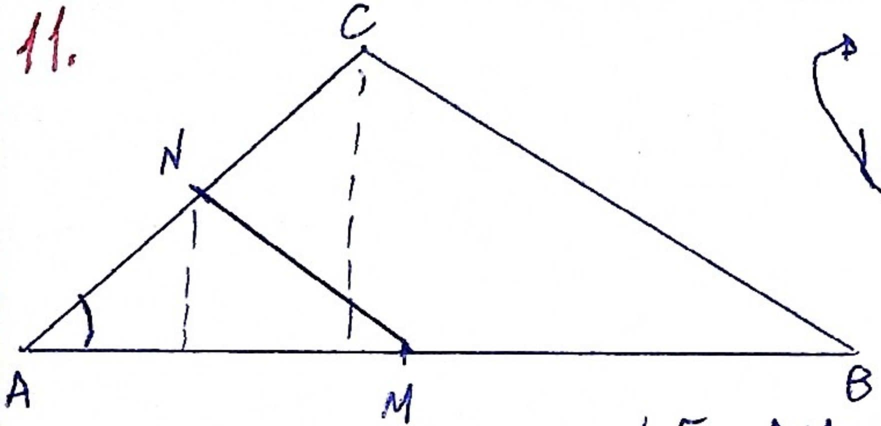
$$12 = \frac{\overline{AD}.\overline{DE}}{2} \Rightarrow 12 = \frac{\overline{AD}.\frac{3.AD}{4}}{2} \Rightarrow \frac{3\overline{AD}^2}{8} = 12$$

$$3\overline{AD}^2 = 96 \to \overline{AD} = \sqrt{32}$$

$$\boxed{\overline{AD} = 4\sqrt{2}}$$

A

11.



$\triangle ABC \sim \triangle AMN$ então $\frac{AM}{AB} = \frac{AN}{AC} = K$

$$\frac{\frac{\overline{AB}}{2}}{\overline{AB}} = K$$

$$2 \cdot K \cdot \overline{AB} = \overline{AB}$$

$$K = \frac{1}{2}$$

$$\frac{A_{AMN}}{A_{ABC}} = K^2 \Rightarrow \frac{A_{AMN}}{96} = \left(\frac{1}{2}\right)^2$$

$$A_{AMN} = \frac{96}{4} = 24 m^2$$

$$A_{BMNC} = A_{ABC} - A_{AMN} \Rightarrow A_{BMNC} = 96 - 24$$

$$A_{BMNC} = 72 m^2$$