Tarefa Básica: Áreas de Quadriláteros e Triângulos

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(1) 400 peças $\longrightarrow$ $\square$ x metros $\rightarrow$ Área de 1 peça $= x^2$

x metros

A solo $= 36\,m^2$

a) $400x^2 = 36\,m^2$ (área de 400 peças $= 36\,m^2$)

$x^2 = \dfrac{36 : 4}{400 : 4}$

Área de 1 peça $= x^2$

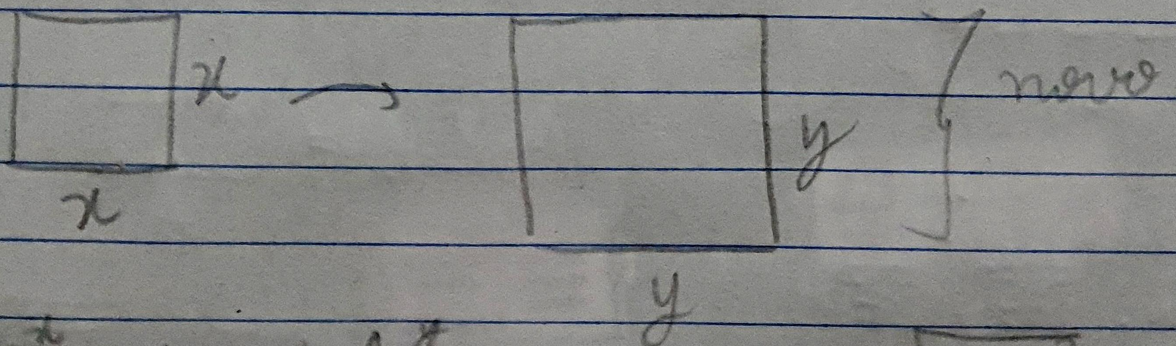
$x^2 = \dfrac{9}{100} \longrightarrow x^2 = \boxed{0{,}09\,m^2}$

b) Perímetro $= x + x + x + x = 4x$

$x^2 = \dfrac{9}{100} \rightarrow x = \sqrt{\dfrac{9}{100}} \Rightarrow \dfrac{\sqrt{9}}{\sqrt{100}} = \dfrac{3}{10}$ //

Perímetro $= 4 \cdot \dfrac{3}{10} = \boxed{1{,}2\,m}$

(2)

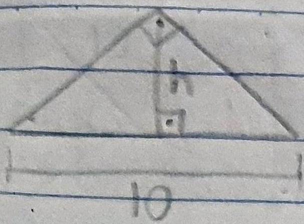


$2 \cdot A_{\square}$ antigo $= A_{\square}$ novo $\rightarrow y = \sqrt{2 \cdot x^2}$

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

$2x^2 = y^2$ $\qquad y = \boxed{\sqrt{2} \cdot x}$ (D)

③

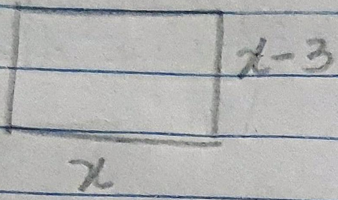


$$A\triangle = 15 \rightarrow 5h = 15$$

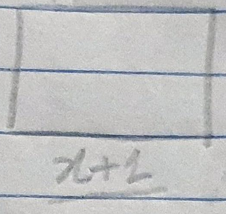
$$\frac{\cancel{10}\cdot h}{\cancel{2}} = 15 \qquad h = \frac{15}{5} = \boxed{3}$$

(D)

④



ampliação:



$x-3+1 = x-2$

$$A\square_{antigo} = x.(x-3) \qquad A\square_{novo} = (x.(x-3))+16$$

$$(x+1).(x-2) = (x.(x-3))+16$$

$$x^2 - 2x + x - 2 = x^2 - 3x + 16$$

$$x^2 - x^2 - x + 3x = 16+2$$

$$2x = 18$$

$$x = \frac{18}{2} = 9\ m$$

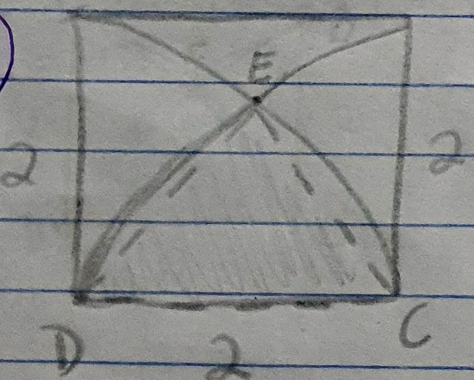
$A\square_{novo} = ?$

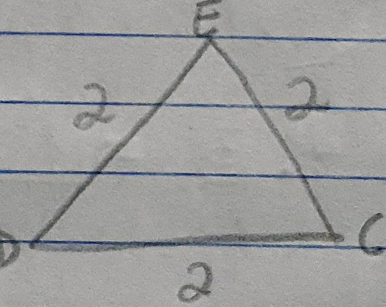
$(x-2).(x+1) =$

$(9-2).(9+1) =$

$(7).(10) = \boxed{70\ m^2}$

⑤





(triângulo equilátero)

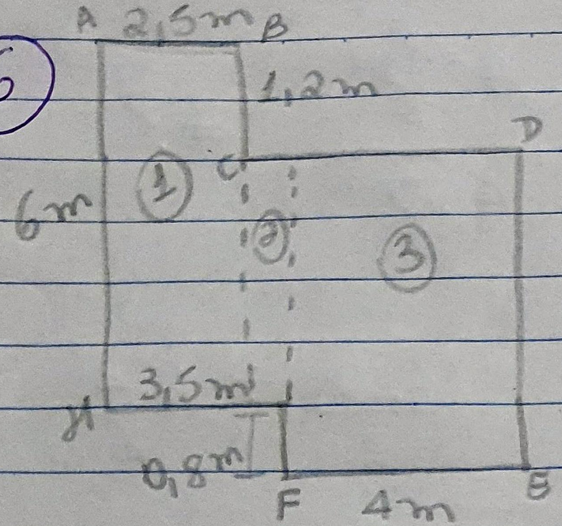
* O raio dos dois arcos é 2. $\overline{DE}$, $\overline{CE}$ e $\overline{CD}$ são raios dos arcos, por isso medem 2

$$A_{D\hat{E}C} = \frac{2^2\sqrt{3}}{4}$$

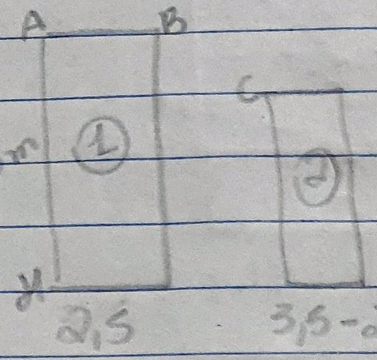
$$A\triangle = \frac{\cancel{4}\sqrt{3}}{\cancel{4}} = \boxed{\sqrt{3}}$$

(B)

6

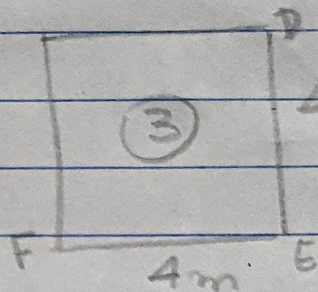


$A_{total} = A_{1} + A_{2} + A_{3}$



$6 - 1,2 = 4,8$

$3,5 - 2,5 = 1$



$4,8 + 0,8 = 5,6$

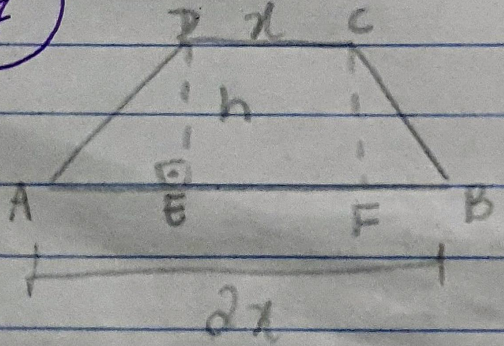
$A_{total} = 6 \cdot 2,5 + 4,8 \cdot 1 + 4 \cdot 5,6$

$A_{total} = 15 + 4,8 + 22,4$

$A_{total} = \boxed{42,2\,m^2}$

(E)

7



$AB = 2CD$

$\begin{cases} AB = 2x \\ CD = x \end{cases}$

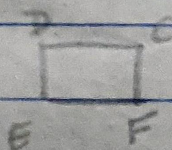
A ⏢ = 36

$\frac{(2x + x) \cdot h}{2} = 36$

$\frac{3x \cdot h}{2} = 36\ um^2$

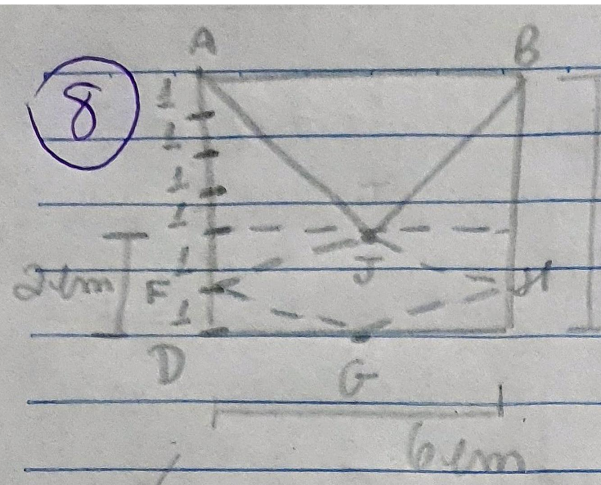
$x \cdot h = \frac{36 \cdot 2}{3}$

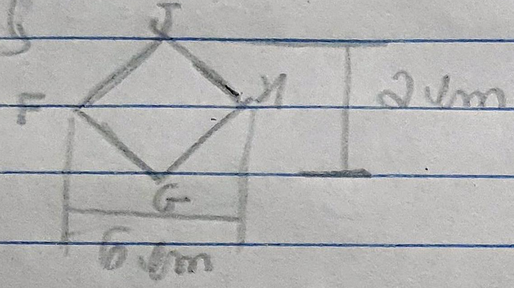
$x \cdot h = 12 \cdot 2 = 24$

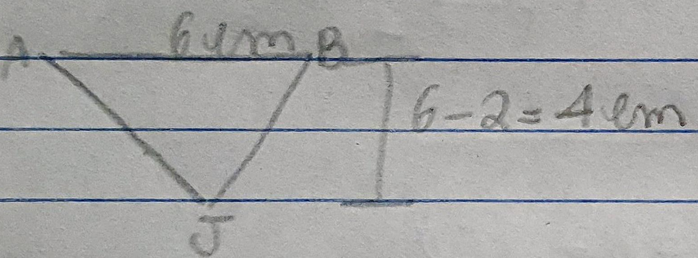
A  = x . h

$x \cdot h = \boxed{24\ um^2}$

8







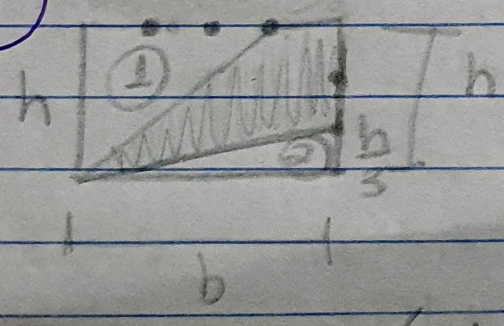
$$\frac{A\,\diamond_{FGHJ}}{A\,\triangledown_{ABJ}} = ?$$

$$\frac{6\cdot\cancel{2}}{\cancel{2}} \div \frac{\overset{3}{\cancel{6}}\cdot 4}{\cancel{2}}$$

$$\overset{2}{\cancel{6}}\cdot\frac{1}{\cancel{3}\cdot 4}$$

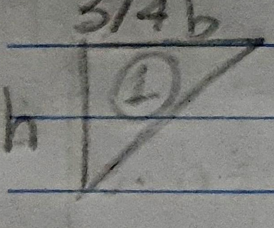
$$\frac{2:2}{4:2} = \boxed{\frac{1}{2}}$$ (D)

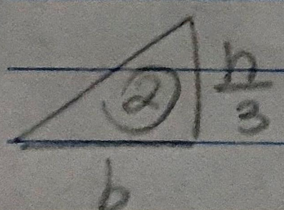
9



$A\square = 48$

$b\cdot h = 48$



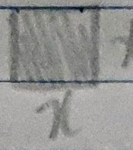


$A_{quadrilátero} = A\square - A② - A①$

$$A_q = 48 - \frac{3}{4}b\cdot\frac{h}{2} - b\cdot\frac{h}{3}\cdot\frac{1}{2}$$

$$A_q = 48 - \frac{3}{\cancel{8}}\cdot\overset{6}{\cancel{48}} - \frac{48}{6}$$

$$A_q = 48 - 18 - 8 = \boxed{22}$$ (E)

10  (quadrado hachurado)

$$\frac{A\ \Delta ABC}{A\ \Delta ADE} = 2 \rightarrow = K^2 \rightarrow K = \sqrt{2}$$

$$\frac{\overline{AB}}{\overline{AD}} = K \rightarrow \frac{8x}{\overline{AD}} = \sqrt{2} \qquad \overline{AD} = \frac{8\sqrt{2}x}{(\sqrt{2})^2}$$

$$\sqrt{2}\,\overline{AD} = 8x \qquad \overline{AD} = \frac{\cancel{8}\sqrt{2}x}{\cancel{2}}$$

$$\overline{AD} = \frac{8x}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$\overline{AD} = \boxed{4\sqrt{2}x}$$ (A)

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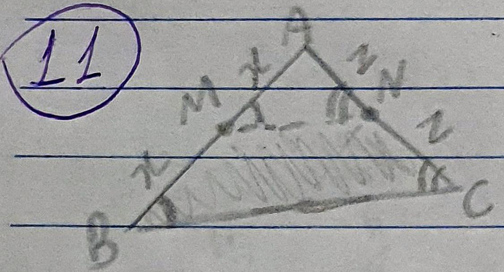

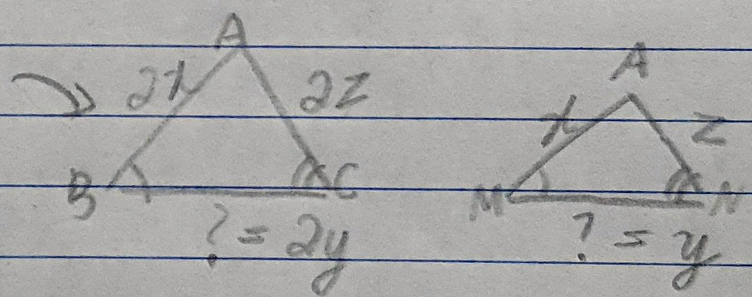

$$\frac{A\ \Delta AMN}{\Delta ABC} = \left(\frac{1}{2}\right)^2$$

(semelhantes com razão $= \frac{1}{2}$)

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

$$\frac{A\Delta AMN}{96} = \frac{1}{4}$$

$$A\Delta AMN = \frac{96}{4}$$

$$A\Delta AMN = 24$$

A ⏢ BMNC = A∆ABC − A∆AMN

A ⏢ BNNC = 96 − 24

A ⏢ BNMC = $\boxed{72\ m^2}$