

$$\textcircled{1} \sin 25^\circ = \frac{1}{\overline{AO}} \Leftrightarrow$$

$$\Leftrightarrow \overline{AO} = \frac{1}{\sin 25^\circ}$$

$$\Leftrightarrow \overline{AO} \approx 2,366$$

$$\text{Raio} = \overline{AO} = 2,366$$

$$A_{\Delta} = \frac{A_0}{2} = \frac{\pi r^2}{2} =$$

$$= \frac{\pi \times 2,366^2}{2} \approx 8,8 \text{ cm}^2$$

$$\textcircled{5} \cos 36^\circ = \frac{\overline{OD}}{2}$$

$$\Leftrightarrow \overline{OD} = 2 \times \cos 36^\circ$$

$$\Leftrightarrow \overline{OD} \approx 1,618$$

$$\text{Então } \overline{BD} = \overline{OD} + \overline{OB} = 1,618 + 2 = 3,618$$

$$\sin 36^\circ = \frac{\overline{AD}}{2}$$

$$\overline{AD} = 2 \times \sin 36^\circ \approx 1,176$$

$$\text{Então } \overline{AE} = 2 \times \overline{AD} = 2,352$$

$$A_{\Delta} = \frac{b \times h}{2} = \frac{2,352 \times 3,618}{2} \approx 4,3$$

$$\textcircled{2} \operatorname{tg} \alpha = \frac{\text{cat. oposta}}{\text{cat. adjacente}} = \frac{\overline{AD}}{\overline{BD}}$$

$$\text{Então } \alpha = \angle ABD$$

$$\textcircled{3} \operatorname{tg} 50^\circ = \frac{\overline{CA}}{\overline{CB}} \Leftrightarrow$$

$$\Leftrightarrow \operatorname{tg} 50^\circ = \frac{\overline{CA}}{8} \Leftrightarrow$$

$$\Leftrightarrow \overline{CA} = 8 \times \operatorname{tg} 50^\circ \Rightarrow$$

$$\Leftrightarrow \overline{CA} \approx 9,5 \text{ cm}$$

$$\textcircled{4} \operatorname{tg} 65^\circ = \frac{\overline{BP}}{\overline{AP}} \Leftrightarrow$$

$$\Leftrightarrow \operatorname{tg} 65^\circ = \frac{\overline{BP}}{1,6} \Leftrightarrow$$

$$\Leftrightarrow \overline{BP} = 1,6 \times \operatorname{tg} 65^\circ \Rightarrow$$

$$\Leftrightarrow \overline{BP} \approx 3,4 \text{ cm}$$

$$\textcircled{6} V_{\text{prisma}} = 42 \Leftrightarrow$$

$$\Leftrightarrow \frac{A \times \overline{AB}}{3} \times 6 = 42 \Leftrightarrow$$

$$\Leftrightarrow \overline{AB} \times 6 = 42 \Leftrightarrow$$

$$\Leftrightarrow \overline{AB} = \frac{42}{6} \Leftrightarrow$$

$$\Leftrightarrow \overline{AB} = 7$$

$$\operatorname{tg} \alpha = \frac{2}{7}$$

$$\alpha = \operatorname{tg}^{-1}\left(\frac{2}{7}\right)$$

$$\alpha \approx 16^\circ$$

$$(7) \operatorname{tg} 32^\circ = \frac{\overline{BI}}{5} \Rightarrow$$

$$\Rightarrow \overline{BI} = 5 \times \operatorname{tg} 32^\circ \Rightarrow$$

$$\Rightarrow \overline{BI} \approx 3,124$$

$$2 \times V_{\text{prisma triangular}} = \frac{5 \times 3,124 \times 3,124 \times 2}{2}$$

$$= 48,79688$$

$$V_{\text{cubo}} = 3,124^3 \approx 30,488$$

$$V_{\text{Sólido}} = 30,488 + 48,79688 \approx 79 \text{ m}^3$$

$$(8) \cos \hat{A}EB = \frac{\overline{BE}}{\overline{AE}} \quad (c)$$

(9)



$$\sin 18^\circ = \frac{x}{16} \Rightarrow$$

$$\Rightarrow x = 16 \times \sin 18^\circ \Rightarrow$$

$$\Rightarrow x \approx 4,94$$

$$\overline{FG} = 2 \times x = 2 \times 4,94 \approx 9,9$$

$$(10) \operatorname{tg} 30^\circ = \frac{\overline{CA}}{\overline{AB}} \Rightarrow$$

$$\Rightarrow \operatorname{tg} 30^\circ = \frac{8}{\overline{AB}} \Rightarrow$$

$$\Rightarrow \overline{AB} \times \operatorname{tg} 30^\circ = 8 \Rightarrow$$

$$\Rightarrow \overline{AB} = \frac{8}{\operatorname{tg} 30^\circ}$$

$$\Rightarrow \overline{AB} \approx 13,356$$

$$A = \frac{b \times h}{2} = \frac{13,356 \times 8}{2} \approx 55 \text{ cm}^2$$

$$(11) \operatorname{tg} 32^\circ = \frac{\overline{DH}}{\overline{DP}} \Rightarrow$$

$$\Rightarrow \operatorname{tg} 32^\circ = \frac{\overline{DH}}{5} \Rightarrow$$

$$\Rightarrow \overline{DH} = 5 \times \operatorname{tg} 32^\circ \Rightarrow$$

$$\Rightarrow \overline{DH} \approx 3,124$$

$$A = \frac{b \times h}{2} = \frac{5 \times 3,124}{2} \approx 8 \text{ cm}^2$$

$$(12) \operatorname{tg} 36^\circ = \frac{\overline{AO}}{\overline{BO}} \Rightarrow$$

$$\Rightarrow \operatorname{tg} 36^\circ = \frac{\overline{AO}}{8} \Rightarrow$$

$$\Rightarrow \overline{AO} = 8 \times \operatorname{tg} 36^\circ \Rightarrow$$

$$\Rightarrow \overline{AO} \approx 5,812$$

$$A_{\triangle} = \frac{b \times h}{2} = \frac{5,812 \times 8}{2} = 23,248$$

$$A_{\triangle} = 2 \times 23,248 = 46,496$$

$$A_{\text{semicírculo}} = \frac{\pi \times r^2}{2} = \frac{\pi \times 8^2}{2} \approx 100,531$$

$$A_{\text{Sombreada}} = 100,531 - 46,496 = 54,035 \approx 54$$

$$(13) \operatorname{tg} \alpha = \frac{1,26}{0,6} \Rightarrow$$

$$\Rightarrow \operatorname{tg} \alpha = 2,1 \Rightarrow$$

$$\Rightarrow \alpha = \operatorname{tg}^{-1}(2,1) \Rightarrow$$

$$\Rightarrow \alpha \approx 65^\circ$$

$$(14) \sin 70^\circ = \frac{\overline{AB}}{\overline{DB}} \Rightarrow$$

$$\Rightarrow \sin 70^\circ = \frac{4,35}{\overline{DB}} \Rightarrow$$

$$\Rightarrow \overline{DB} \times \sin 70^\circ = 4,35 \Rightarrow$$

$$\Rightarrow \overline{DB} = \frac{4,35}{\sin 70^\circ} \Rightarrow$$

$$\Rightarrow \overline{DB} \approx 4,63$$

$$(15) \sin \alpha = \frac{\overline{BC}}{\overline{BA}} \Rightarrow$$

$$\Rightarrow \sin \alpha = \frac{1,7}{2,5} \Rightarrow$$

$$\Rightarrow \sin \alpha = 0,68 \Rightarrow$$

$$\Rightarrow \alpha = \sin^{-1}(0,68) \Rightarrow$$

$$\Rightarrow \alpha \approx 43^\circ$$

$$(18) \operatorname{tg} \alpha = \frac{1,8}{2} \Rightarrow$$

$$\Rightarrow \operatorname{tg} \alpha = 0,9 \Rightarrow$$

$$\Rightarrow \alpha = \operatorname{tg}^{-1}(0,9) \Rightarrow$$

$$\Rightarrow \alpha \approx 42^\circ$$

$$(19) \operatorname{tg} \beta = \frac{42}{300} \Rightarrow$$

$$\Rightarrow \beta = \operatorname{tg}^{-1}\left(\frac{42}{300}\right) \Rightarrow$$

$$\Rightarrow \beta \approx 8^\circ$$

$$(16) \sin 40^\circ = \frac{a}{2,8} \Rightarrow$$

$$\Rightarrow a = 2,8 \times \sin 40^\circ \Rightarrow$$

$$\Rightarrow a \approx 1,8 \text{ m}$$

$$(17) \sin 35^\circ = \frac{2}{\overline{EB}} \Rightarrow$$

$$\Rightarrow \overline{EB} \times \sin 35^\circ = 2 \Rightarrow$$

$$\Rightarrow \overline{EB} = \frac{2}{\sin 35^\circ} \Rightarrow$$

$$\Rightarrow \overline{EB} \approx 3 \text{ m}$$

$$(20) \sin \alpha = \frac{15}{30} \Rightarrow$$

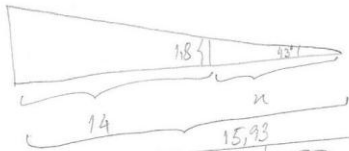
$$\Rightarrow \sin \alpha = 0,5 \Rightarrow$$

$$\Rightarrow \alpha = \sin^{-1}(0,5) \Rightarrow$$

$$\Rightarrow \alpha = 30^\circ$$

Como  $30^\circ > 26^\circ$ , a amplitude permitte uma visao das do filare

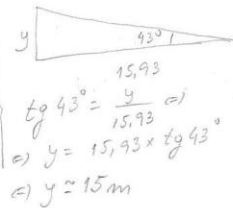
(21)



$$\operatorname{tg} 43^\circ = \frac{1,8}{x} \Rightarrow$$

$$\Rightarrow x \times \operatorname{tg} 43^\circ = 1,8 \Rightarrow$$

$$\Rightarrow x = \frac{1,8}{\operatorname{tg} 43^\circ} \Rightarrow x \approx 1,93$$

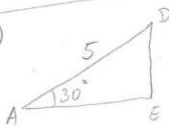


$$\operatorname{tg} 43^\circ = \frac{y}{15,93} \Rightarrow$$

$$\Rightarrow y = 15,93 \times \operatorname{tg} 43^\circ$$

$$\Rightarrow y \approx 15 \text{ m}$$

(22)



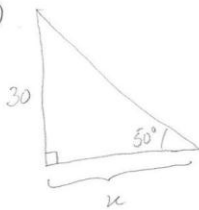
$$\sin 30^\circ = \frac{\overline{DE}}{5} \Rightarrow$$

$$\Rightarrow \overline{DE} = 5 \times \sin 30^\circ \Rightarrow$$

$$\Rightarrow \overline{DE} = 5 \times 0,5 \Rightarrow$$

$$\Rightarrow \overline{DE} = 2,5$$

(23)



$$\operatorname{tg} 50^\circ = \frac{30}{x} \Rightarrow$$

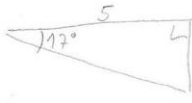
$$\Rightarrow x \times \operatorname{tg} 50^\circ = 30 \Rightarrow$$

$$\Rightarrow x = \frac{30}{\operatorname{tg} 50^\circ} \Rightarrow$$

$$\Rightarrow x \approx 25 \text{ m}$$

(24) (A)  $\sin \alpha = \frac{b}{a}$

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(25)   $\tan 17^\circ = \frac{1}{5}$   $\Leftrightarrow$   
 $\Leftrightarrow x = 5 \times \tan 17^\circ \Leftrightarrow$   
 $\Leftrightarrow x \approx 1,5 \text{ m}$

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(26) 

$\sin 3^\circ = \frac{10}{x} \Leftrightarrow$

$\Leftrightarrow x \times \sin 3^\circ = 10 \Leftrightarrow$

$\Leftrightarrow x = \frac{10}{\sin 3^\circ} \Leftrightarrow$

$\Leftrightarrow x \approx 191,0732$

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Então,  $c = 2 \times 191,0732 \approx 382,1465 \text{ cm} \approx 3,8 \text{ m}$