

DATA/FECHA / /
S/L · T/M · Q/M · Q/J · S/V · S/S · D/D

STAR
WARS™

① a) $\sin \frac{4\pi}{3} \rightarrow \frac{4\pi}{3} - \pi = \frac{\pi}{3} \rightarrow \sin \frac{4\pi}{3} = -\sin \frac{\pi}{3}$

b) $\sin \frac{5\pi}{6} \rightarrow \sin(\pi - \frac{5\pi}{6}) \rightarrow \sin \frac{\pi}{6}$

c) $\sin \frac{5\pi}{3} \rightarrow \sin \frac{5\pi}{3} - \sin(2\pi - \frac{5\pi}{3}) \rightarrow -\sin \frac{\pi}{3}$

d) $\cos \frac{2\pi}{3} \rightarrow \cos 120^\circ | -(180^\circ - 120^\circ) = -\cos 60^\circ \rightarrow -\cos \frac{\pi}{3}$

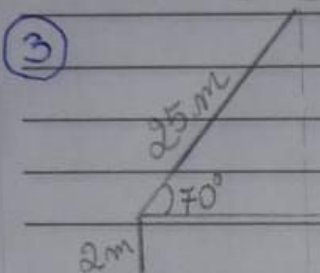
e) $\cos \frac{7\pi}{6} \rightarrow \cos 120^\circ | -(210^\circ - 180^\circ) = -\cos 30^\circ \rightarrow -\cos \frac{\pi}{6}$

f) $\cos \frac{4\pi}{3} \rightarrow \cos 240^\circ | -(240^\circ - 180^\circ) = -\cos 60^\circ \rightarrow -\cos \frac{\pi}{3}$



② $\cos \theta = \text{adj}/\text{hip} \rightarrow \text{hip} = \frac{4 \text{ cm}}{0,8} \rightarrow a \approx 4,88 \text{ cm}$

$\text{sen } \theta = \text{op}/\text{hip} \rightarrow \text{op} = 4,88 \cdot 0,57 \rightarrow b \approx 2,8 \text{ cm}$



$\text{sen } \theta = \text{op}/\text{hip} \rightarrow \text{op} = 25 \cdot 0,9397$

$+ 23,49 \text{ m} + 2 \text{ m}$

$\text{Altura} = 25,49 \text{ metros}$

④ $\rightarrow \text{op} = \frac{\text{sen } \theta}{\text{hip}} \rightarrow \text{hip} = \frac{12}{0,1736} = 69,1244 \text{ m}$

I) $\rightarrow \text{op} = \frac{\text{sen } \theta}{\text{hip}} \rightarrow \text{hip} = \frac{12}{0,225} = 53,333 \text{ m}$

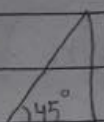
II) $\text{adj} = \cos \cdot \text{hip}$

$\hookrightarrow 69,1244 \cdot 0,9848 = 68,0737$

$\hookrightarrow 53,3333 \cdot 0,9744 = 51,9676$

$68,0737 - 51,9676 \approx 16,1 \text{ m}$



⑤  $20 \text{ m} \rightarrow \text{rem } \theta = \text{op} / \text{hip}$

$$\text{hip} = \frac{20 \cdot 2}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{40\sqrt{2}}{2} \rightarrow d_2 = 20\sqrt{2} \text{ m}$$

$$\cos 45^\circ = \frac{\overline{BC}}{d_2} \rightarrow \frac{20\sqrt{2} \cdot \sqrt{2}}{2} = 20$$

$$(d_1)^2 = (30)^2 + (20)^2 \rightarrow 900 + 400 = d_1^2 \rightarrow d_1 = \sqrt{1300}$$

$$d_1 = 10\sqrt{13} \text{ m}$$

⑥ $\frac{8}{\text{rem } 90^\circ} = \frac{h}{\text{rem } 45^\circ} \rightarrow \frac{h}{\sqrt{2}/2} = 8 \rightarrow h = \frac{8\sqrt{2}}{2} = 4\sqrt{2} \text{ cm}$

$$V = \pi \cdot r^2 \cdot h \rightarrow 3^2 \cdot 4\sqrt{2} \cdot \pi \rightarrow 9 \cdot 4\sqrt{2} \cdot \pi$$

$$\text{Volume} = 36\sqrt{2}\pi \text{ cm}^3$$

⑦ $l = \frac{\alpha \cdot \pi \cdot r}{180^\circ} \rightarrow \frac{160^\circ \cdot \pi \cdot 6}{180^\circ} \rightarrow \frac{16\pi}{3}$

$$2\pi r = 2 \cdot \pi \cdot 6 = 12\pi \rightarrow 12\pi - \frac{16\pi}{3} = \frac{20\pi}{3} \text{ cm} = C$$

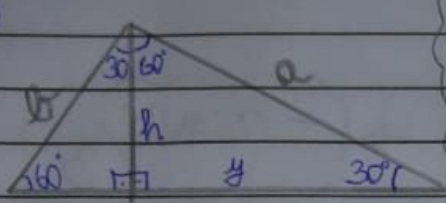
$$r \rightarrow r = \frac{l \cdot 180^\circ}{\alpha \cdot \pi} \rightarrow \frac{76 \cdot 180^\circ}{229 \cdot \pi} \rightarrow r \approx 19 \text{ cm}$$



8) $l = \frac{\alpha \cdot \pi \cdot r}{180^\circ} \rightarrow \alpha = \frac{l \cdot 180}{\pi \cdot r} \rightarrow \frac{3 \text{ cm} \cdot 180}{\pi \cdot 10} \rightarrow \frac{54}{3,14} = 17,19$

$\alpha = 17^\circ 11' 19''$

9)



$a \rightarrow \sin 30^\circ = h/a \rightarrow \frac{1}{2} = \frac{h}{a} \rightarrow a = 2h$

$(2h)^2 = h^2 + y^2 \rightarrow y = 3h$

$h \rightarrow \frac{\sqrt{3}}{2} = \frac{h}{\text{hip}} \rightarrow \frac{2h}{\sqrt{3}} \rightarrow h = \frac{2\sqrt{3}}{3} h$

$\left(\frac{2\sqrt{3}}{2}\right)^2 = h^2 + x^2$

$x = h$ e $y = 3h$

$\frac{3 \cdot 3}{9} h \rightarrow x = h$

$y = 3x$

10) $0,94 = x/3 \rightarrow x = 2,82 \text{ m}$

$\hookrightarrow 4 - 2,82 = 1,18 \text{ m}$

Ele deve apoiar na altura de 1,18 metros

