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Prontuário: **CB1990233** *IFSP - Câmpus Cubatão*

Tarefa Básica - Aula 4

1.

1/5 do Volume do maior

$\frac{1}{5} \cdot \pi r^2$

$\frac{1}{5} \cdot 10^2 \cdot 40\pi$

$\frac{1}{5} \cdot 4000\pi$

800π

$\pi r^2 h = 800\pi$

$5^2 h = 800$

$h = 800/25$

$\boxed{h = 32\ cm}$

A

2.

V_1 → Volume de C_1

V_2 → Volume de C_2

$\frac{V_1}{V_2} = \frac{1}{27}$

$\frac{\pi (R_1)^2 \cdot h_1}{\pi (R_2)^2 \cdot h_2} = \frac{1}{27}$

$\frac{(R_1)^2 \cdot 2R_1}{(R_2)^2 \cdot 16R_2} = \frac{1}{27}$

$\left(\frac{R_1}{R_2}\right)^3 = \frac{8}{27}$

$\boxed{\frac{R_1}{R_2} = \frac{2}{3}}$

E

3.

Cilindro I

$V = \pi r^2 h$

$16\pi = \pi r^2 h$

$r^2 h = 16$

$2\pi\left(\frac{3}{2}\right) r h = 2\pi r (h + r)$ → $AL_2 = A_{T_1}$

$\frac{h}{2} = r$

$\left(\frac{h}{2}\right)^2 \cdot h = 16$

$\frac{h^2}{4} \cdot h = 16$

$h^3 = 64$

$h = \sqrt[3]{64} = \boxed{4}$

D

4. $V = \pi r^2 h$

$\pi (r+12)^2 \cdot 4 = \pi r^2 \cdot (4+12)$

$\pi (r^2 + 24r + 144) \cdot 4 = \pi r^2 16$

$\pi (4r^2 + 96r + 576) = \pi 16r^2$

$4r^2 + 96r + 576 = 16r^2$

$16r^2 - 4r^2 - 96r - 576 = 0$

$12r^2 - 96r - 576 = 0 \ (\div 12)$

$r^2 - 8r - 48 = 0$

Δ $12 + -4 = 8$

$12 \cdot -4 = -48$

$r' = 12$ cm

$r'' = -4$ cm

A

5.

$r = 20$ cm

$h = 0,8$ mm $= 0,08$ cm

$Ab = \pi r^2$

$Ab = \pi 20^2$

$Ab = \pi 400$

$V = Ab \cdot h$

$V = 400\pi \cdot 0,08$

$V = 32\pi$

$V = 100,5 \text{ cm}^3$

B

1.

$Ab = b \cdot h$

$Ab = x \cdot 2x$

$Ab = 2x^2 \text{ cm}^2$

$V = \frac{Ab \cdot h}{3}$

$48 = \frac{2x^2 \cdot 8}{3}$

$16x^2 = 48 \cdot 3$

$x^2 = 144/16$

$x = \sqrt{9} = 3$

C

2.

$A_b = 80^2$

$A_b = 6400\ mm^2$

$h^2 = 40^2 + 30^2$

$h^2 = 1600 + 900$

$h = \sqrt{2500} = 50\ mm$

$A_L = \frac{80 \cdot 50}{2}$

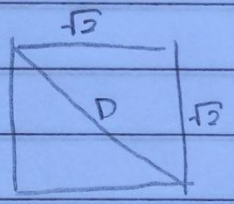
$A_L = 2000\ mm^2$

$A_T = 4 \cdot 2000 + 6400$

$\boxed{A_T = 14400\ mm^2}$

E

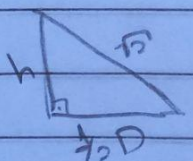
3.



$D = L\sqrt{2}$

$D = \sqrt{2} \cdot \sqrt{2}$

$\boxed{D = 2}$



$(\sqrt{2})^2 = h^2 + 1^2$

$2 = h^2 + 1$

$h^2 = 1$

$h = \sqrt{1} = \boxed{1\ cm}$

C

4.

$A_b = \frac{3L^2\sqrt{3}}{2}$

$A_b = \frac{3a^2\sqrt{3}}{2}$

$V = \frac{A_b \cdot h}{3}$

$V = \frac{\frac{3a^2\sqrt{3}}{2} \cdot 6\sqrt{3}}{3}$

$V = \frac{\frac{3a^2 \cdot 3b}{2}}{3}$

$\boxed{V = \frac{3a^2 \cdot b}{2}}$

A

5.

$A_b = \frac{3L^2\sqrt{3}}{2}$ $\quad V = \frac{A_b \cdot h}{3}$

$A_b = \frac{3 \cdot 4^2 \sqrt{3}}{2}$ $\quad V = \frac{24\sqrt{3} \cdot 6\sqrt{3}}{3}$

$A_b = \frac{48\sqrt{3}}{2}$ $\quad V = \frac{144 \cdot 3}{3}$

$A_b = 24\sqrt{3}\ cm^2$ $\quad \boxed{V = 144\ cm^3}$

D

6.

$2p = 6\ cm$

$L = 6 \div 6 = 1\ cm$

$A_b = \frac{3 \cdot 1^2 \sqrt{3}}{2}$ $\quad V = \frac{\frac{3\sqrt{3}}{2} \cdot 8}{3}$

$A_b = \frac{3\sqrt{3}}{2}\ cm^2$ $\quad V = \frac{8\sqrt{3}}{2}$

$\boxed{V = 4\sqrt{3}\ cm^3}$

A

7.

Pirâmide:	Prisma:	$\frac{4a^2 \cdot h_1}{2} = a^2 \cdot h_2$
$A_b = (2a)^2$	$A_b = a^2$	$\frac{h_1}{h_2} = \frac{3a^2}{4a^2}$
$A_b = 4a^2$		
	$V = a^2 \cdot h_2$	$\boxed{\frac{h_1}{h_2} = \frac{3}{4}}$
$V = \frac{4a^2 \cdot h_1}{3}$		

A

8. $A_T = a^2\sqrt{3}$ $\quad h = \frac{a\sqrt{6}}{3}$ $\quad \Rightarrow h = \frac{6}{3}$

$6\sqrt{3} = a^2\sqrt{3}$

$a = \sqrt{6}$ $\quad h = \frac{\sqrt{6} \cdot \sqrt{6}}{3}$

$\boxed{h = 2\ cm}$

A