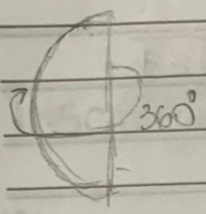
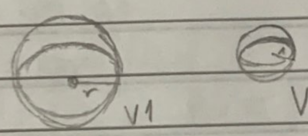
ESFERA E SUAS PARTES

1.
(c) pela rotação de um semi-círculo em torno de seu diâmetro.



2.



$V_1 = V_2 \cdot 1000000$

$\cancel{4/3\pi} \cdot r^3 = \cancel{4/3 \cdot \pi}\, 1^3 \cdot 1000000$

$r^3 = 1000000$

$R = \sqrt[3]{1000000} \rightarrow R = \sqrt[\cancel{3}]{10^{\cancel{6}}}$

$R = 10^2 \rightarrow R = 100$

3. $Vc = \dfrac{4\pi r^3}{3} \rightarrow Vc = \pi(2r)^2 h \rightarrow Vc = \pi(2R)^2 \cdot 4r$

$\dfrac{4\pi R^3/3}{\pi(2R)^2 \cdot 4R/1} \rightarrow \dfrac{4\cancel{\pi}R^3}{\cancel{\pi}4R^2 \cdot 12R} \rightarrow \dfrac{4\cancel{R^3}}{48\cancel{R^3}} \rightarrow \dfrac{4^{:4}}{48^{:4}} \rightarrow \dfrac{1}{12}$

R: E

4. $V_{cil} = V_{esf1} + V_{esf2}$

$V_{cil} = 4/3\pi r^3 + 4/3 \cdot \pi \cdot r^3$

$4/3\pi \cdot 1^3 + 4/3 \cdot \pi \cdot 2^3$

$4/3\pi + 4/3 \cdot \pi \cdot 8$

$4/3\pi + 4 \cdot 8 \cdot \pi/3$

$4/3\pi + 32/3 \cdot \pi$

$V_{cil} = \dfrac{36\pi}{3} \rightarrow 12\pi$

$12\pi = \pi \cdot r^2 \cdot h$

$12\pi = \pi \cdot r^2 \cdot 3$

$\dfrac{12\cancel{\pi}}{3\cancel{\pi}} = r^2$

$r^2 = 4$

$r = \sqrt{4}$

$r = 2$

R: B

5. $V_{cil} = \pi . 6^2 . 1 = 36\pi$

$V_{esf} = 36\pi$

$4/3 . \pi . r^3 = 36\pi$

$4\pi . r^3 = 36\pi . 3$

$4\pi . r^3 = 108\pi$

$r^3 = \frac{108\cancel{\pi}}{4\cancel{\pi}} \rightarrow r^3 = 108/4 \rightarrow r = 27 \rightarrow r = \sqrt[3]{27}$

$r = \sqrt[3]{3^3} \rightarrow R = 3$ cm R: C

6. $V_{esf} = 288\pi$ cm^3 $a = d = 2r$

$288\pi = 4/3 . \pi . r^3$

$3 . 288\pi = 4\pi . r^3$

$864\pi = 4\pi . r^3$

$r^3 = 864\pi / 4\pi$

$r^3 = 864/4 \rightarrow r^3 = 216 \rightarrow R = \sqrt[3]{216} \rightarrow r = \sqrt[3]{6^3} \rightarrow r = 6$ cm

$d = 2 . r \rightarrow d = 2 . 6 \rightarrow d = 12$

$d = a$ R: E

$\hookrightarrow A = 12$ cm

7. $h = 16$ cm	$R = d/2$	$r = 2$ cm
$d = 20$ cm	$R = 10$ cm	

Qtd bol $= 1600\pi / 32\pi/3$

$1600\pi . 3 / 32\pi$

$4800\cancel{\pi} / 32\cancel{\pi}$

$4800/32$

Qtd bol $= 150$

$VP = \pi . r^2 . h$

$VP = \pi . 10^2 . 16$

$VP = \pi . 100 . 16$

$VP = 1600\pi$

$VB = 4/3 \pi . r^3$

$4/3 . \pi . 2^3$

$4/3 . \pi . 8$

$VB = 32\pi/3$

R: D

tilibra

8. $4\pi r^3/3/2 = \pi r^2 . h = \pi r^2 . h/3 \rightarrow 4\pi R/3/2 = \pi H$

$\pi . h/3 \rightarrow 2R/3 \rightarrow A = h/3 \rightarrow 2R = 3H = \frac{3h}{3}$

$2R = 3H = h$

$2R = R = 3H$

R: D

INSCRIÇÃO E CIRCUNSCRIÇÃO DE SÓLIDOS

01.

$A = 4\pi . R^2$

$R^2 = 100\pi/4\pi$

$R = \sqrt{25} \rightarrow R = 5$

$R^2 = r^2 + (h - R)^2$

$R^2 = r^2 + h^2 - 2h . R + R^2$

$R = \frac{R^2 + h^2}{2h}$

$G^2 = h^2 + r^2$

$(\sqrt{30})^2 = h^2 + r^2$

$30 = h^2 + r^2$

$5 = \frac{30}{2h} = 3m$

R: 3 minutos.

2.

$\frac{4\pi . r^2}{6a^2} = \frac{4\pi (a/2)^2}{6a^2} = \frac{4\pi a^2 / \cancel{4}}{6a^2} = \frac{\pi \cancel{a^2}}{6\cancel{a^2}} \rightarrow \frac{\pi}{6}$ R: A

3.

$\frac{V esf. \ de \ r = 2}{V \ cubo \ insc.}$

Diagonal cubo = 2R

Diagonal cubo = $a\sqrt{3}$

$2R = a\sqrt{3} \rightarrow R = a\sqrt{3}/2 \rightarrow \frac{Ve}{Vc} = \frac{4 . \pi r^3}{3} \cdot a^3 =$

$\frac{4\pi R^3}{3a^3} = \frac{4\pi}{3a^3}\left(\frac{a\sqrt{3}}{2}\right)^3 \rightarrow \frac{4\pi a^3 3\sqrt{3}}{3a^3 . 8} \rightarrow \frac{12\sqrt{3}}{28} = \frac{\sqrt{3}\pi}{2}$ R: B

04. Razões de semelhança

$V_{cilindro} = A_{base} \cdot h$

$\pi r^2 \cdot 2r$

$\pi 2^2 \cdot 2 \cdot 2$

16π

$\frac{R}{R} = \frac{12 - 2r}{12} \rightarrow \frac{R}{3} = \frac{12 - 2r}{12}$

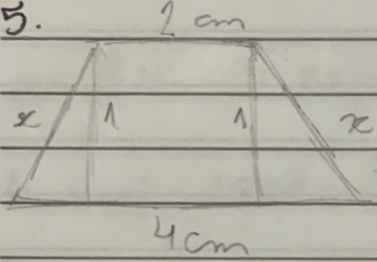
$12R = 36 - 6R$

$18R = 36$

$R : 2$

R: $16\pi \, m^2$

5.



$V = ?$

$2 \cdot V_{cone} = 2 \cdot 1/3 \cdot \pi \cdot 1^2 \cdot 1 \rightarrow 2/3 \cdot \pi \cdot 1.1 \rightarrow 2/3\pi$

$R = 1 \quad H = 2$

$V_{cil} = \pi R^2 \cdot h \rightarrow \pi \cdot 1^2 \cdot 2 \rightarrow 2\pi$

$V = 2/3\pi + 2\pi$

$4.2\pi/3$

$V = 8\pi/3 \ cm^3$