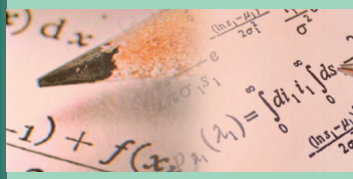
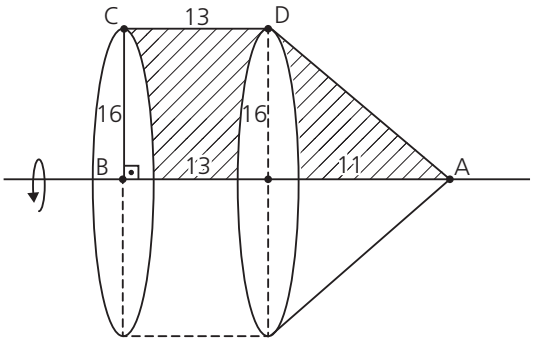


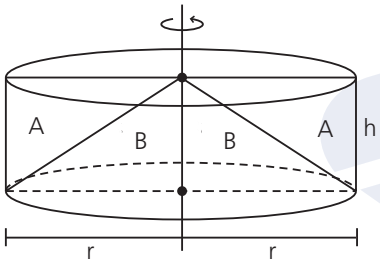
01. Do enunciado, temos a figura a seguir.



$$V_{sólido} = \underbrace{\pi \cdot 16^2 \cdot 13}_{\text{cilindro}} + \underbrace{\frac{\pi \cdot 16^2 \cdot 11}{3}}_{\text{cone}} = \frac{12800\pi}{3}\ cm^3$$

Resposta: D

02. Segundo o enunciado, temos:



I. $2A + 2B = \pi r^2 \cdot h = V$ (volume total)

II. $2B = \frac{\pi r^2 \cdot h}{3} = \frac{V}{3}$ (cone)

III. $2A = V - \frac{V}{3} = \frac{2V}{3}$ (cilindro-cone)

Resposta: A

03.

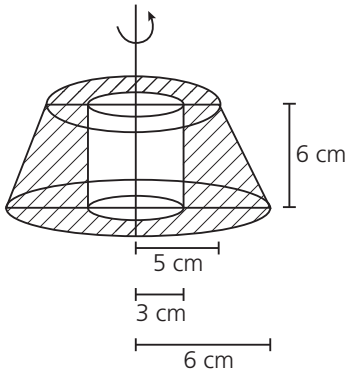
$$V = \frac{V_{esfera}}{2} - V_{cilindro}$$

$$V = \frac{1}{2} \cdot \frac{4\pi}{3} R^3 - \pi r^2 \cdot h$$

$$V = \frac{2\pi}{3} \cdot (3)^3 - \pi (1)^2 \cdot 1 = 18\pi - \pi = \boxed{17\pi}$$

Resposta: D

04.



$$V_{sólido} = V_{tronco\ cone} - V_{cilindro}$$

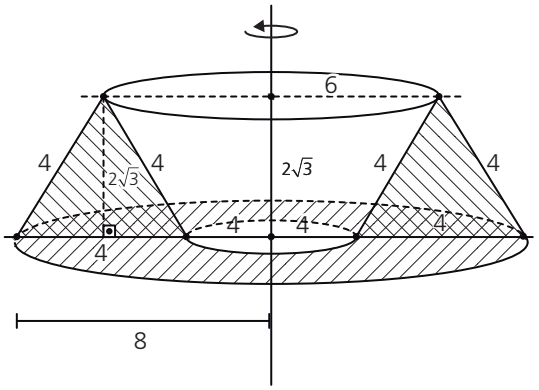
$$V_{sólido} = \frac{k\pi}{3}\left(R^2 + Rr + r^2\right) - \pi r^2 \cdot h$$

$$V_{sólido} = \frac{6\pi}{3}(36 + 30 + 25) - \pi (3)^2 \cdot 6$$

$$\boxed{V_{sólido} = 128\pi}$$

Resposta: E

05. Do enunciado, temos a figura a seguir.

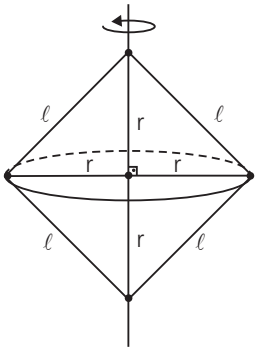


$$A_{Total} = \underbrace{\pi(8+6)\cdot 4}_{\substack{\text{Lateral}\\(\text{Tronco externo})}} + \underbrace{\pi(6+4)\cdot 4}_{\substack{\text{Lateral}\\(\text{Tronco interno})}} + \underbrace{\pi\cdot 8^2 - \pi\cdot 4^2}_{\text{Coroa circular}}$$

$$A_{Total} = 56\pi + 40\pi + 48\pi = 144\pi \text{ cm}^2$$

Resposta: D

06. A figura a seguir representa o sólido obtido a partir de uma rotação 180° em torno da diagonal do quadrado de lado ℓ.



Veja que:

$$2r = \ell\sqrt{2} \rightarrow r = \frac{\ell\sqrt{2}}{2}(\text{raio})$$

Logo:

$$V_{sólido} = 2\left(\frac{\pi r^2 r}{3}\right) = \frac{2\pi}{3}\cdot\left(\frac{\ell\sqrt{2}}{2}\right)^3 = \frac{\pi\ell^3\sqrt{2}}{6}$$

Resposta: D

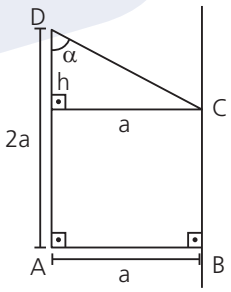
07.

I. $\text{tg}\,\alpha = \frac{a}{h} = \frac{5}{6} \rightarrow h = \frac{6}{5}a$

II. $V_{sólido} = V_{cilindro} - V_{cone}$

$$V_{sólido} = \pi(a^2)2a - \frac{\pi(a)^2}{3}\cdot\frac{6}{5}a$$

$$V_{sólido} = 2a^3\pi - \frac{2a^3\pi}{5} = \boxed{\frac{8a^3\pi}{5}}$$



Resposta: E

08.

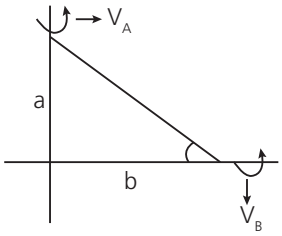
$V_B = 2V_A$

$$\frac{\pi R^2 H}{3} = 2\frac{\pi r^2 h}{3}$$

$$a^2 b = 2b^2 a$$

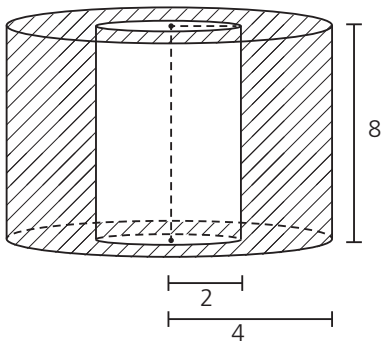
$$a = 2b \rightarrow \boxed{\frac{a}{b} = 2}$$

$$\text{tg}\,\alpha = \boxed{2}$$



Resposta: D

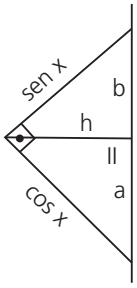
09.



$V_{desejado} = \pi \cdot 4^2 \cdot 8 - \pi \cdot 2^2 \cdot 8 = 96\,\pi$

Resposta: E

10.



I. $(a+b)^2 = sen^2x + cos^2 x \rightarrow (a+b)^2 = 1 \rightarrow a+b = 1$

II. $V = V_I + V_{II}$

$V = \frac{\pi}{3}h^2 \cdot a + \frac{\pi}{3}h^2 \cdot b \rightarrow \pi = \frac{\pi h^2}{3}(a+b) \rightarrow 3 = h^2 \cdot 1 \rightarrow h^2 = 3 \rightarrow h = \sqrt{3}$ (absurdo, pois $h < senx$)

Resposta: E