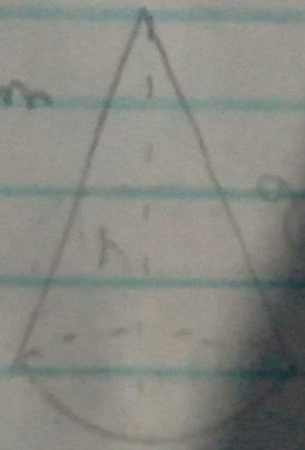
Nome: Rodrigo Moreira da Silva Data: CT II 317

Cones

1.

$\pi r = 20\pi$ cm

$R = 20$ cm



$h^2 + r^2 = g^2$

$h^2 + 10^2 = 20^2$

$h^2 + 400 = 400$

$h^2 = 300$

$h = \sqrt{300}$

$h = 10\sqrt{3}$

Área lat = AL =

$\frac{1}{2} \cdot \pi \cdot 20^2 = \pi \cdot r \cdot 20$

2

$r = 10$

R. a)

R: a)

2.

volume do cone = $\frac{1}{3}$ AB.h

$AB \cdot \frac{12}{3} = 64\pi$

$12AB = 192\pi$

$AB = 16\pi$

Raio

$AB = \pi . r^2$

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

$r^2 = 16$

$r = 4$

geratriz do cone

$g^2 = 4^2 + 12^2$

$g^2 = 16 + 144$

$g = 160$

$g = 4\sqrt{10}$

3

$AB = \pi . r^2$

$36\pi = \pi . r^2$

$r^2 = 36$

$r = 6\,cm$

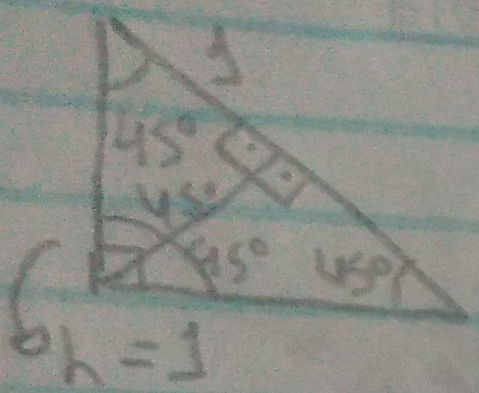
$r = h = 6\,cm$

$V = 36\pi$

$V = 36\pi$

$V = 36$

4.

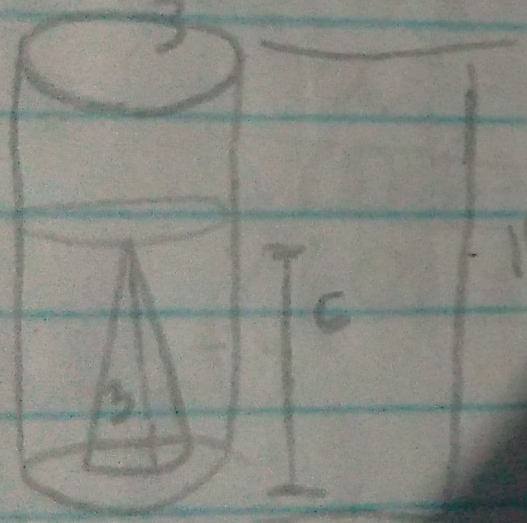


$V_T = 2 . V_{cone}$

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

$V_T = \frac{2\pi}{3} cm^3$

5.



$V_{cilindro} = \pi . r^2 . h$

$= \pi . 3^2 . 5 = 45\pi$

$V_{cone} = \frac{1}{3} \pi . r^2 . h =$

$= \frac{1}{3} . \pi . 3^2 . 3 = 9\pi$

$V_{resto} = 45\pi - 9\pi = 44\pi$ R. e)

6.

$V_{cone} = \frac{1}{3} AB \cdot h$

V_{prisma} com h do cone:

$V_{prisma} = AB \cdot \frac{2h}{3}$

Razão

$V_{prisma} = AB \cdot \frac{2h}{3}$

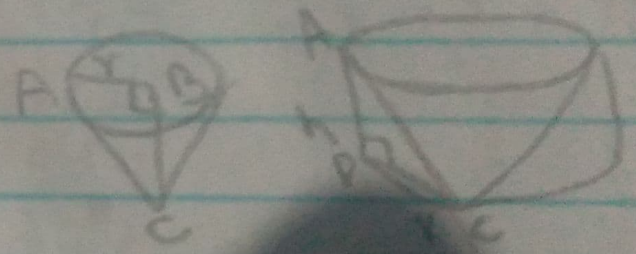
$V_{cone} = \frac{1}{3} AB \cdot h$

$= \boxed{2}$ R: a)

7.

$r \rightarrow \overline{AB}$

$h \rightarrow BC$



V_{ABC} e $V_{ADC} \rightarrow$ Volumes

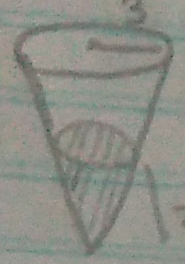
$V_{ABC} = V_{cone} = \frac{1}{3} \pi \cdot r^2 h$

$V_{ABC} = V_{cilindro} - V_{cone} = \pi r^2 \cdot h - \frac{1}{3} \pi \cdot r^2 \cdot \pi = \frac{2}{3} \pi \cdot r^2 \cdot h$

Razão $= \frac{\frac{1}{3} \pi \cdot r^2 \cdot h}{\frac{2}{3} \pi \cdot r^2 \cdot h} = \boxed{\frac{1}{2}}$

Tronco

1.



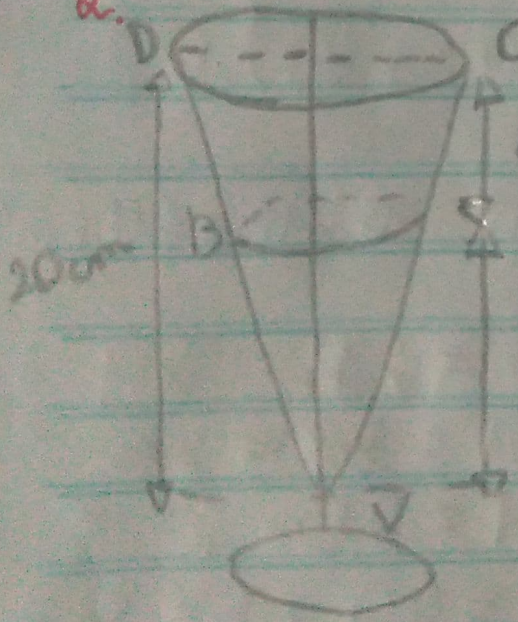
$V_g = \frac{1}{3}\pi \cdot 3^2 \cdot 8 = 24\pi\ cm^3$

$V_p = \frac{1}{2} \cdot V_g = \frac{1}{2} \cdot 24\pi \rightarrow \boxed{V_p = 12\pi\ cm^3}$

$\frac{V_p}{V_g} = \left(\frac{x}{8}\right)^3 = \frac{12\pi}{24\pi} = \frac{x^3}{8^3} = x^3 = \frac{x \cdot 4 \cdot 8^2}{x} = \sqrt[3]{x^3} = \sqrt[3]{4 \cdot 2^3 \cdot 2^3}$

$\boxed{x = 4\sqrt[3]{4}\ cm}$ R:)

2.



V_E = espuma $\quad \frac{V_S}{V_C} = \left(\frac{16}{20}\right)^3 \rightarrow \frac{V_S}{V_C} = \left(\frac{4}{5}\right)^3$

V_S = sorvete

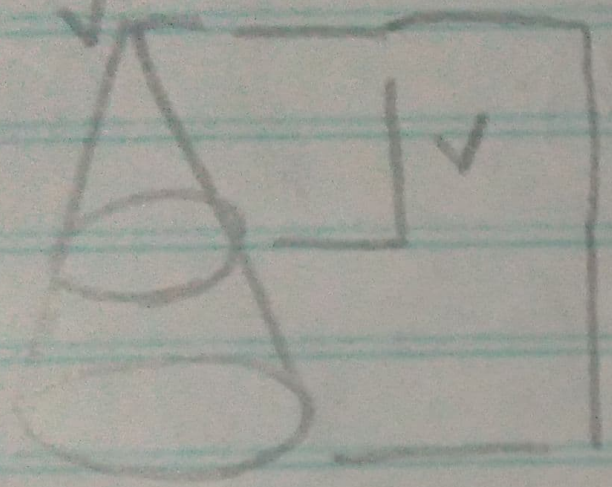
V_C = copo $\quad V_S = \frac{64\ V_C}{125}$

$V_E = V_C - V_S = V_C - \frac{64}{125} V_C = \frac{61}{125} V_C$

$= 0,488\ V_C$

$V_E = 48,8\% \cdot V_C = 50\% \cdot V_C$ R: C)

3.



$$\frac{y}{h} = \frac{1}{\sqrt[3]{2}}$$

$$\frac{y}{h} = \frac{1}{\sqrt[3]{2}} \cdot \frac{\sqrt[3]{2^2}}{\sqrt[3]{2^2}}$$

$$\frac{y}{h} = \frac{\sqrt[3]{4}}{2}$$

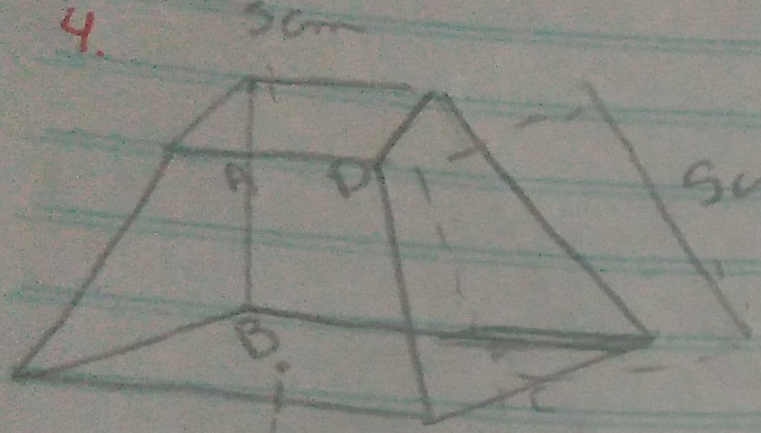
$$y = h\frac{\sqrt[3]{4}}{2}$$

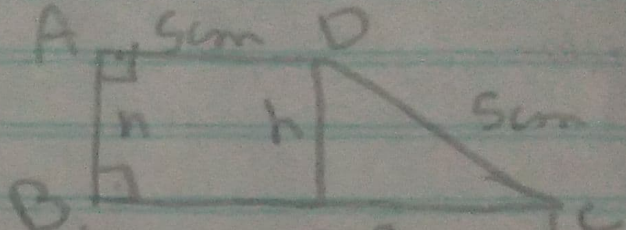
$$\left(\frac{h}{y}\right)^3 = \frac{2V}{V}$$

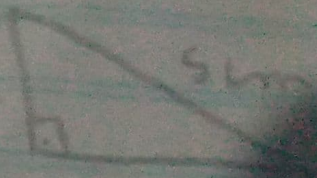
$$h = \sqrt[3]{2}\,y$$

$$\left(\frac{h}{y}\right)^3 = 2$$

4.







8cm

$5^2 = 3^2 + h^2$

$25 = 9 + h^2$

$-h^2 = 9 - 25$

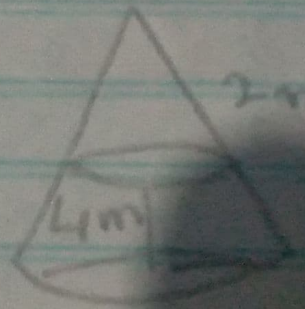
$-h^2 = -16 \quad (\cdot -1)$

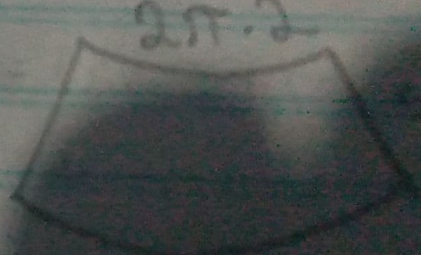
$h^2 = 16$

$h = \sqrt{16}$

$\boxed{h = 4\,cm}$

5.





$A_t = \pi.2^2 + \pi.5^2 + (10\pi + 4\pi).5$

$= 4\pi + 25\pi + 35\pi$

$h^2 = 16$

$h = \sqrt{16}$

$\boxed{h = 4\ cm}$

5π

$A_T = \pi.2^2 + \pi.5^2 + \frac{(10\pi + 4\pi).5}{2}$

$= 4\pi + 25\pi + 35\pi \rightarrow \boxed{A_T = 64\pi\ m^2}$

$\frac{h}{H} = \frac{2}{5} \rightarrow h = \frac{2H}{5} \rightarrow H - 4 = \frac{2H}{5} \rightarrow 5H - 20 = 2H$

$5H - 2H = 20$

$3H = 20$

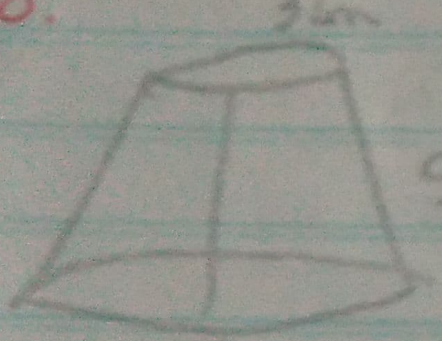
$H = \frac{20}{3} \rightarrow h = \frac{8}{3}$

$V = \frac{1}{3}\pi.5^2.H - \frac{1}{3}\pi.2^2.h$

$V = \frac{1}{3}\pi.25.\frac{20}{3} - \frac{4\pi}{3}.\frac{8}{3}$

$\frac{V\pi}{3} = \left(\frac{500}{3} - \frac{32}{3}\right) \rightarrow \frac{\pi}{3} = \frac{468}{9} = \boxed{52\pi\ m^3}$

6.

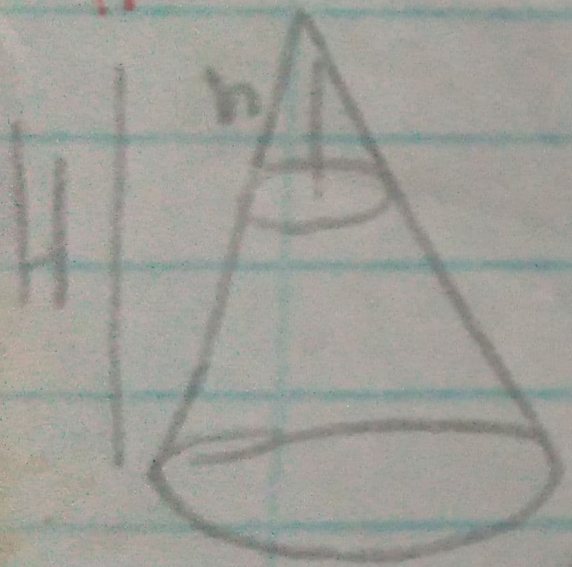


$$\frac{\pi x}{3} \cdot (R^2 + r^2 + Rr)$$

$$\frac{\pi \cdot 3}{3} \cdot (7^2 + 3^2 + 7 \cdot 3)$$

$$\pi \cdot 9\pi \cdot (49 + 9 + 21) \rightarrow \boxed{79\pi}$$

7.



$$\frac{V_\Delta}{V_0} = \boxed{\frac{1}{2} = K^3}$$

R: c)

$$\frac{h}{H} = \sqrt[3]{\frac{1}{2}} = \frac{1}{\sqrt[3]{2}} \cdot \frac{\sqrt[3]{2^2}}{\sqrt[3]{2^2}} \Rightarrow \boxed{h = \frac{H\sqrt[3]{4}}{2}}$$