1- $R = 20$ cm

$g = 2 \cdot \pi$

$2 \cdot 10 = 20$

$\frac{2\pi R}{2} = 2\pi$

$\frac{20}{2} = \pi = 10$

$g^2 = H^2 + \pi^2$

$20^2 = H^2 + 10^2$

$h^2 = 300$

$h = 10\sqrt{3}$ cm

Alternativa A

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

$64\pi = \frac{1}{3} \pi \cdot R^2 \cdot 12$

$64 = \frac{12R^2}{3}$

$R^2 = \frac{64}{4} = \sqrt{16} = 4$

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

$g = \sqrt{160}$

$g = 4\sqrt{10}$ cm

Alternativa B

3- $A = 36\pi$ cm^2

$36\pi = \pi R^2$

$R = \sqrt{36} = 6$

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

$V = \frac{1}{3} \cdot \pi \cdot 6^2 \cdot 6$

$V = \frac{216\pi}{3} = 72\pi$ cm

Alternativa A

4- $2^2 = l^2 + l^2$

$2l^2 = 4$

$l = \sqrt{2}$

$\sqrt{2}^2 = 1^2 + x^2 \rightarrow x^2 = 2 - 1 \rightarrow x = 1$

$V = 2 \cdot \frac{1}{3} \cdot \pi \cdot 1^2 \cdot 1$ $\quad V = \frac{2\pi}{3}$ Alternativa E

5- $V = \pi \cdot 3^2 \cdot 5 - \frac{1}{3} \cdot \pi \cdot 1^2 \cdot 3$

$V = 45\pi - \frac{3\pi}{3}$

$V = 44\pi$

Alternativa E

6- $\frac{\pi \cdot R^2 \cdot \frac{2}{3} \cdot h}{\frac{1}{3} \cdot \pi \cdot R^2 \cdot h} = \frac{\frac{2}{3}}{\frac{1}{3}} = \frac{6}{3} = 2$ Alternativa A

7- $R = \frac{\pi \cdot \frac{x^2}{3} \cdot y}{2\pi \cdot \frac{x^2}{3} \cdot y}$ $\quad R = \frac{1}{2}$

Alternativa E

1- $\frac{V_c}{V} = \frac{H^3}{A^3} \rightarrow \frac{24\pi}{12\pi} = \frac{8^3}{A^3}$

$A = \sqrt[3]{256} = \sqrt[3]{2^3 \cdot 2^3 \cdot 2^2}$

$A = 4\sqrt[3]{4}$ cm

Alternativa E

2-

$V_e = V_c - \frac{64}{125} \cdot V_c$

$V_e = \frac{61 V_c}{125} = 0,488 \cdot V_c$ $\quad V_e \cong 50\% \cdot V_c$

Alternativa C

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

4- $5^2 = h^2 + 3^2 \rightarrow h^2 = 25 - 9 \rightarrow h = \sqrt{16} = 4$

5- $A_t = 4\pi + 25\pi + 35\pi$

$A_t = 64\pi \ m^2$

$V = \frac{\pi \cdot 4 \cdot 39}{3} = V = \frac{52\pi \ m^3}{3}$

6- $5^2 = h^2 + 4^2$

$h^2 = 25 - 16$

$h = 3$

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

$V = \pi(49 + 9 + 21)$

$V = 79\pi \text{ cm}^2$

Alternativa D

7- $2h^3 = H^3$

$h^3 = \frac{H^3}{2}$

$h = \frac{\sqrt[3]{H^3}}{\sqrt[3]{2}}$

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

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

$h = \frac{H\sqrt[3]{4}}{2}$ Alternativa A