

Aula 30

1. $\frac{3\sqrt{3}}{16\pi}$

2. $5\sqrt{15}$

3. $\frac{1}{2}$

4. $2\pi \operatorname{sen} \alpha$

5. (Desafio!)

$$V = \pi r^2 h \quad \therefore \quad h = \frac{V}{\pi r^2}$$

$$A = 2\pi r^2 + 2\pi r h$$

$$A = 2\pi r^2 + 2\pi r \left(\frac{V}{\pi r^2} \right)$$

$$A = 2\pi r^2 + \frac{2V}{r}$$

$$\frac{dA}{dr} = 0 = 4\pi r - \frac{2V}{r^2} \quad \therefore \quad \frac{2V}{r^2} = 4\pi r \quad \therefore \quad V = 2\pi r^3$$

$$2\pi r^3 = \pi r^2 h \quad \therefore \quad \boxed{h = 2r}$$

6. (d)

7. (e)

8. (a)

9. (b)