$$V = \pi r^2 h + \frac{2}{3} \pi r^3$$

$$A = 2\pi r h + 3\pi r^2$$

$$\frac{dA}{dr} = 2\pi h + 2h r \frac{dh}{dr} + 6\pi r$$

$$\frac{dV}{dr} = h' \pi r^2 + 2\pi r h + 2\pi r^2$$

$$0 = \quad // \quad // \quad //$$

$$h' = -2 \cdot \frac{h+r}{r}$$

$$A' = -2\pi h + 2\pi r$$

a) $A' = 0 \Rightarrow h = r$

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

$$A' = 2h\pi + 2\pi r h' + 4\pi r$$

$$h' = -2 \cdot \frac{h+r}{r}$$

$$A' = -2\pi h$$

$$A' = 0 \Rightarrow h = 0$$