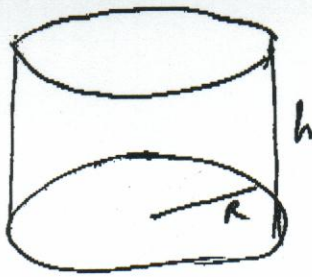


ESERCIZIO 3.



$$S = \pi R^2 + 2\pi R \cdot h$$

↓

$$h = \frac{S - \pi R^2}{2\pi R}$$

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

V è definita da 0 a $\sqrt{\frac{S}{\pi}}$, poiché deve essere $S - \pi R^2 \geq 0$.

$$V'(R) = \frac{S}{2} - \frac{3}{2}\pi R^2$$

$$V'(R) = 0 \Leftrightarrow R = \sqrt{\frac{S}{3\pi}}$$

$V(0) = V\left(\sqrt{\frac{S}{\pi}}\right) = 0$. $R = \sqrt{\frac{S}{3\pi}}$ è raggio di massimo.