Solução

$$V(t) = \frac{\pi r^2(t)h(t)}{3}$$

$$r(t) = r_0 + \frac{dr}{dt}t \qquad h(t) = h_0 + \frac{dh}{dt}t$$

$$r(t) = 2 + 0.05t \qquad h(t) = 3 + 0.1t$$

$$V(t) = \frac{\pi(2 + 0.05t)^2(3 + 0.1t)}{3}$$

$$V(t) = \frac{\pi}{3}\left(\frac{t^3}{4000} + \frac{11t^2}{400} + t + 12\right)$$