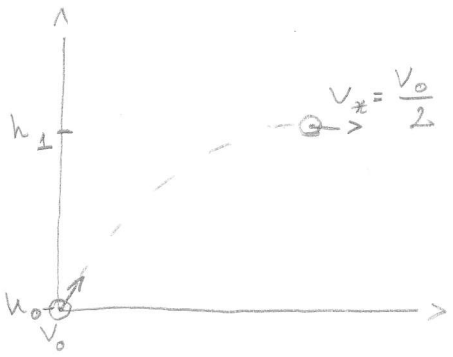
Física 10/11 - Época Normal

11)

Corpo 1



$E_{m_i} = E_{m_f}$

$E_{c_i} + E_{pg_i} = E_{c_f} + E_{pg_f}$

$\frac{1}{2} m v_0^2 = \frac{1}{2} m \left(\frac{v_0}{2}\right)^2 + m g h_1$

$\frac{v_0^2}{2} = \frac{v_0^2}{8} + g h_1$

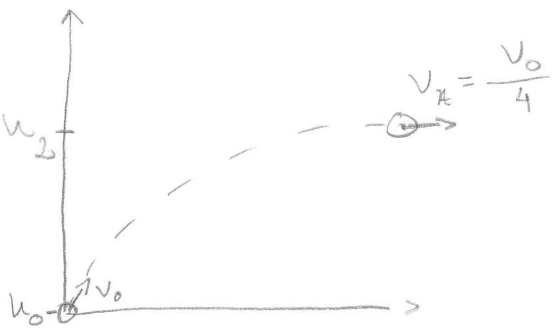
(4)

$\frac{4v_0^2}{8} - \frac{v_0^2}{8} = g h_1$

$\frac{3v_0^2}{8} = g h_1$

$v_0^2 = \frac{8}{3} g h_1$ //

Corpo 2



$E_{m_i} = E_{m_f}$

$E_{c_i} + E_{pg_i} = E_{c_f} + E_{pg_f}$

$\frac{1}{2} m v_0^2 = \frac{1}{2} m \left(\frac{v_0}{4}\right)^2 + m g h_2$

$\frac{v_0^2}{2} = \frac{v_0^2}{32} + g h_2$

(16)

$\frac{16v_0^2}{32} - \frac{v_0^2}{32} = g h_2$

$\frac{15v_0^2}{32} = g h_2$

$v_0^2 = \frac{32}{15} g h_2$

$\frac{8}{3} g h_1 = \frac{32}{15} g h_2 \Leftrightarrow \frac{120}{96} h_1 = h_2 \Leftrightarrow$

$\Leftrightarrow h_2 = \frac{5}{4} h_1$ //