

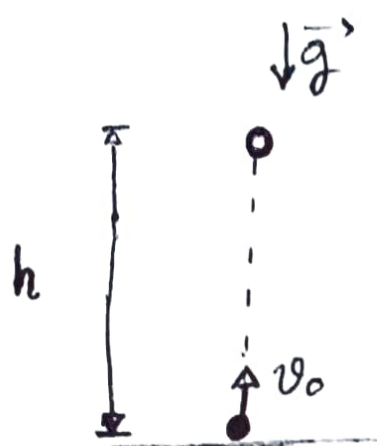
01.

$$v(t) = 8t - 7; \quad a_m = \frac{\Delta v}{\Delta t} = \frac{v(t_f) - v(t_i)}{t_f - t_i} = \frac{v_{15s} - v_{5s}}{t_f - t_i} = \frac{(8t_f - 7) - (8t_i - 7)}{t_f - t_i}$$

$$\therefore a_m = \frac{8(t_f - t_i)}{t_f - t_i} = 8 \frac{m}{s^2}, \forall t_i, t_f$$

Logo, para t pertencente ao intervalo $5 \leq t \leq 15$, a $a_m = 8 m/s^2$

02.

~~1) Kinematics~~

$$i) -g = \frac{v - v_0}{\Delta t} \therefore v - v_0 = -g \cdot \Delta t \therefore v = v_0 - g \cdot \Delta t$$

$$\Rightarrow \Delta t = -\frac{v - v_0}{g}$$

$$ii) h \rightarrow h_{\max} \Rightarrow v \rightarrow 0 \text{ (conservação da energia)}$$

$$\therefore \Delta t = \frac{v_0}{g} = \frac{28 m/s}{10 m/s^2} = \underline{\underline{2,88 s}}$$

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