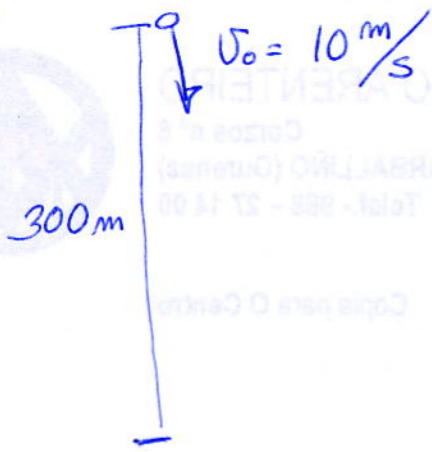


4



$$v_0 = 10 \text{ m/s}$$

$$v_f = ?$$

$$s = 300 \text{ m}$$

$$a = g = 9.81 \text{ m/s}^2$$

$$t = ?$$

$$a) v_f^2 = v_0^2 + 2gs \quad (1)$$

$$v_f = \sqrt{10^2 + 2 \cdot 9.81 \cdot 300}$$

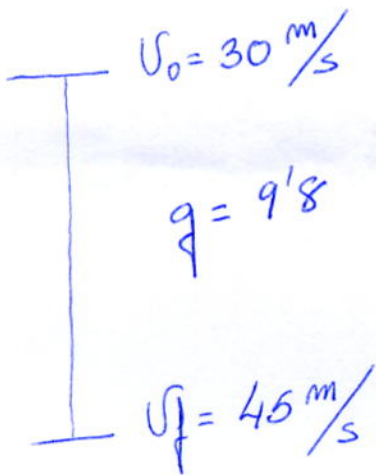
$$v_f = \sqrt{5986}$$

$$v_f = \underline{\underline{77.37 \text{ m/s}}}$$

$$b) v_f = v_0 + gt$$

$$77.34 = 10 + 9.81 \cdot t \rightarrow t = \frac{77.34 - 10}{9.81} = \underline{\underline{6.86 \text{ s}}}$$

5



$$b) v_f^2 = v_0^2 + 2gs$$

$$45^2 = 30^2 + 2 \cdot 9.8 \cdot s$$

$$s = \frac{45^2 - 30^2}{2 \cdot 9.8} = \underline{\underline{57.4 \text{ m}}}$$

$$a) v_f = v_0 + gt$$

$$45 = 30 + 9.8 \cdot t$$

$$t = \frac{45 - 30}{9.8} = \underline{\underline{1.53 \text{ s}}}$$

$$c) v_f = v_0 + gt$$

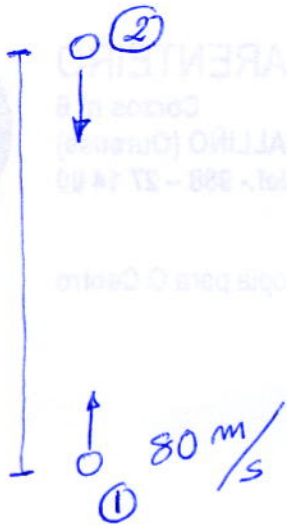
$$v_0 \text{ es ahora } 45 \text{ m/s}$$

$$v_f = 45 + 9.8 \cdot 10$$

$$v_f = \underline{\underline{143 \text{ m/s}}}$$

6

2



$$v_f^2 = v_0^2 - 2gs$$

$$v_0^2 = 2gs \Rightarrow s = \frac{v_0^2}{2g}$$

$$s = \frac{80^2}{2 \cdot 9.81} = 326.2 \text{ m}$$

$$s_1 = v_{01} t - \frac{1}{2} g t^2$$

$$s_2 = v_{02} t + \frac{1}{2} g t^2$$

$$s_1 + s_2 = s_{\text{TOTAL}}$$

$$326.2 \text{ m} = 80 \cdot t - \frac{1}{2} 9.81 \cdot t^2 + \frac{1}{2} 9.81 \cdot t^2$$

$$t = \frac{326.2}{80} = 4.1 \text{ s} *$$

$$s_1 = 80 \cdot 4.1 - \frac{1}{2} 9.81 \cdot 4.1^2 = 245.54 \text{ m}$$

$$s_2 = \frac{1}{2} 9.81 \cdot 4.1^2 = 82.45 \text{ m}$$

$$327.99 \text{ m}$$

La diferencia es por tomar 4.1 s en vez de 4.077 s en la división *