

$$1) v_0 = 0$$

$$t = 7s$$

$$h = ?$$

$$v = ?$$

$$a = +9,8 \text{ m/s}^2$$

$$v = v_0 + at \Rightarrow \underline{v = 0 + 9,8 \cdot 7 = 68,6 \text{ m/s}}$$

$$e = v_0 t + \frac{1}{2} at^2 \Rightarrow \underline{h = 0 + \frac{1}{2} \cdot 9,8 \cdot 7 = 240,1 \text{ m}}$$

$$2) v_0 = 90 \frac{\text{km}}{\text{h}} \cdot \frac{1000}{3600} = 25 \text{ m/s}$$

$$e_{\text{obstáculo}} = 17 \text{ m}$$

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

$$e = ?$$

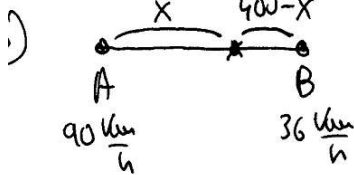
$$v = 0$$

$$v^2 - v_0^2 = 2ae$$

$$0 - 25^2 = -2 \cdot 2 \cdot e$$

$$e = \frac{25^2}{4} = \frac{625}{4} = 156,25 \text{ m}$$

$$\underline{e < e_{\text{obst.}} \Rightarrow \text{No colisiona}}$$



$$90 = \frac{x}{t} \rightarrow x = 90t$$

$$36 = \frac{400-x}{t} \rightarrow 36t = 400 - x \rightarrow x = 400 - 36t$$

$$90t = 400 - 36t \Rightarrow 90t + 36t = 400$$

$$126t = 400 \Rightarrow t = \frac{400}{126} = 3,17 \text{ h}$$

$$x = 90t = 90 \cdot 3,17 = \underline{285,3 \text{ km de la ciudad A}}$$