

## QUESTÕES OBJETIVAS

11- D 12- C e E 13- E 14- A 15- D

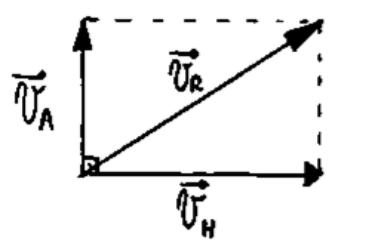
## QUESTÕES DISCURSIVAS

1)

a)  $v_{0-E} = \frac{\Delta s_{0-E}}{\Delta t} \rightarrow 0,8 = \frac{700}{\Delta t} \rightarrow \boxed{\Delta t = 875 \text{ s} = 14 \text{ min e } 35 \text{ s}}$

b)  $v_{S-N} = \frac{\Delta s_{S-N}}{\Delta t} \rightarrow 0,6 = \frac{\Delta s_{S-N}}{875} \rightarrow \boxed{\Delta s_{S-N} = 525 \text{ m}}$

c)



$$\begin{aligned} v_R^2 &= v_H^2 + v_A^2 \\ v_R^2 &= (0,8)^2 + (0,6)^2 \rightarrow \boxed{v_R = 1 \frac{\text{m}}{\text{s}}} \end{aligned}$$

2)

a)  $E_{\text{MEC FINAL}} = E_{\text{MEC INICIAL}} \rightarrow \frac{m \cdot v_{\text{final}}^2}{2} = m \cdot g \cdot h \rightarrow \boxed{v_{\text{final}} = \sqrt{2gh}}$

Sim, Ana está certa, pois, como a energia mecânica é conservada, a velocidade final independe da massa.

b)  $C_{\text{fat}} = E_{\text{MEC INICIAL}} - E_{\text{MEC FINAL}} = m \cdot g \cdot h - \frac{m \cdot v^2}{2}$

$$C_{\text{fat}} = 40 \cdot 10 \cdot 3 - \frac{40 \cdot (6,0)^2}{2} \rightarrow \boxed{C_{\text{fat}} = 480 \text{ J}}$$