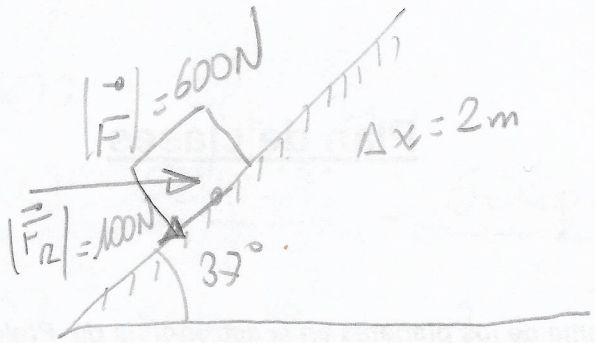
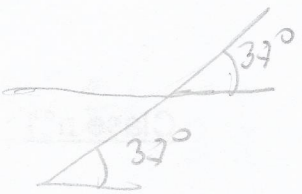
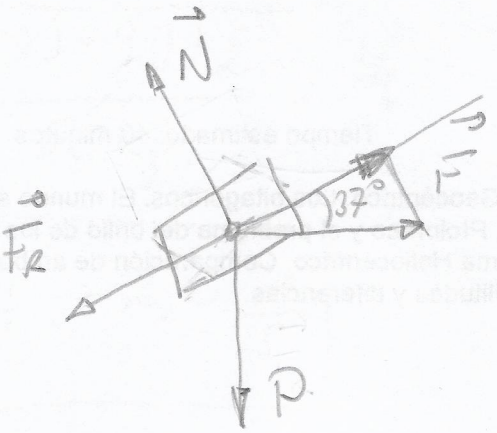
$\text{sen } 37° = 0{,}6$

$\cos 37° = 0{,}8$

$m = 50\,kg$







a) $W_F = F \cdot d \cos 37° = 600N \cdot 2m \cdot 0{,}8$

$\boxed{W_F = 960\,J}$

b) $W_{F_R} = F_R \cdot d \cdot \cos 180° = 100N \cdot 2m\,(-1)$

$\boxed{W_{F_R} = -200\,J}$

c) $W_P = P \cdot d \cdot \cos 127° = 500N \cdot 2m\,(-0{,}6)$

$\boxed{W_P = -600\,J}$

d) $\boxed{W_N = 0}$

e) $W_R = W_F + W_P + W_{F_R} = 960J - 600J - 200J$

$\boxed{W_R = 160\,J}$

f) $W_R = F_R \cdot d \Rightarrow F_R = \frac{160\,J}{2m}$ $\boxed{F_R = 80N}$

5)

g) $W_R = \Delta E_c$

$160\,J = E_{cf} - E_{co}$

$160\,J = \frac{50kg \cdot V_f^2}{2} - \frac{50kg \cdot (0{,}6\,\frac{m}{s})^2}{2}$

$160\,J = \frac{50kg\,V_f^2}{2} - 9\,J$

$\sqrt{\frac{(160\,J + 9\,J)\,2}{50kg}} = V_f$

$$\boxed{V_f = 2{,}6\,\frac{m}{s}}$$

h) $\boxed{E_{co} = 9\,J}$

$\boxed{E_{cf} = 169\,J}$

$E_{cf} = \frac{50kg \cdot (2{,}6\,\frac{m}{s})^2}{2} = 169\,J$