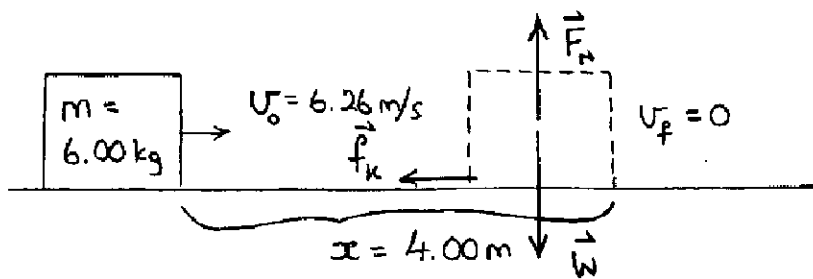


C3.



(a) Use  $E_0 + W_{nc} = E_f$

$$E_0 + W_{fr} = E_f$$

$$W_{fr} = E_f - E_0 = 0 - \frac{1}{2} m v_0^2 = -\frac{1}{2} (6.00 \text{ kg}) (6.26 \text{ m/s})^2$$

$$W_{fr} = -118 \text{ J}$$

(b)  $a_y = 0$  so  $\sum F_y = 0$  so  $F_N - W = 0$  so  $F_N = mg$

$$f_k = \mu_k F_N = \mu_k mg$$

$$W_{fr} = f_k (\cos 180^\circ) x$$

$$W_{fr} = \mu_k mg \cos 180^\circ x$$

$$\mu_k = \frac{-W_{fr}}{mg x} = \frac{-(-118 \text{ J})}{(6.00 \text{ kg})(9.80 \text{ m/s}^2)(4.00 \text{ m})}$$

$$\mu_k = 0.502$$