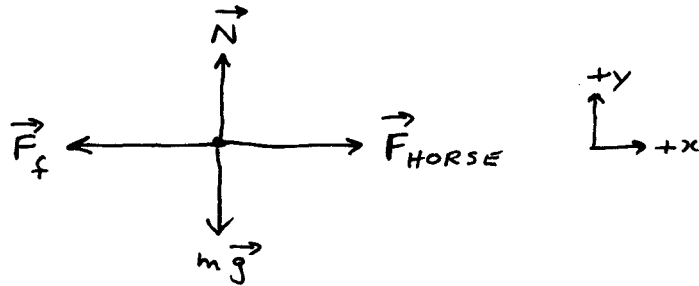


### Exercise 8-15

Forces acting on cutter:



$$\vec{v} = \text{const.} \therefore \vec{a} = 0$$

$$\therefore \Sigma F_x = m a_x = 0$$

$$\therefore F_{HORSE} - F_f = 0$$

$$\text{Subst. } F_f = \mu_k N \quad \therefore F_{HORSE} = \mu_k N$$

Determine  $N$  from  $\underbrace{\Sigma F_y = m a_y = 0}$

$$N - mg = 0 \quad \therefore N = mg$$

$$\therefore F_{HORSE} = \mu_k mg = 0.110(250 \text{ kg})(9.80 \text{ m/s}^2) = 2.70 \times 10^2 \text{ N}$$