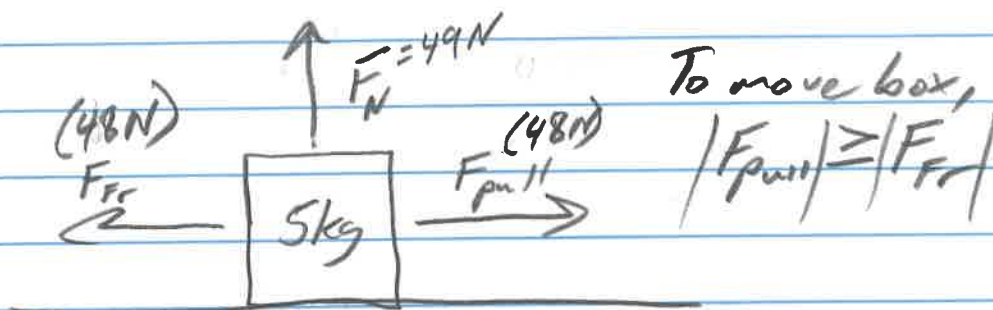


37.

a)



minimum
pulling
force

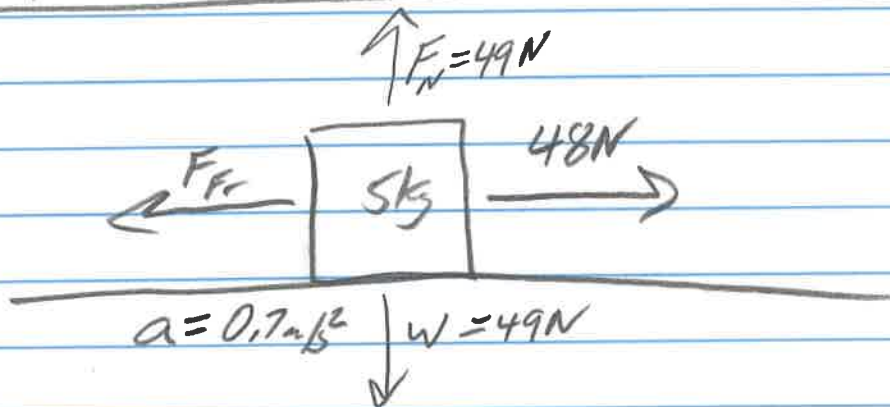
$$F_{\text{pull}} = F_{\text{fr}} = \mu_s (F_N)$$

$$F_N = mg = 5\text{kg}(9.8\text{m/s}^2) = 49\text{N}$$

$$48\text{N} = \mu_s (49\text{N})$$

$$\mu_s = \frac{48\text{N}}{49\text{N}} = 0.98$$

b)



$$\Sigma F = 48\text{N} - F_{\text{fr}}$$

$$\Sigma F = ma = 5\text{kg}(0.7\text{m/s}^2) = 3.5\text{N}$$

$$3.5\text{N} = 48\text{N} - F_{\text{fr}}$$

$$44.5\text{N} = F_{\text{fr}} = \mu_k F_N = \mu_k (49\text{N})$$

$$44.5\text{N} = \mu_k (49\text{N}) \quad \mu_k = \frac{44.5\text{N}}{49\text{N}} = 0.91$$