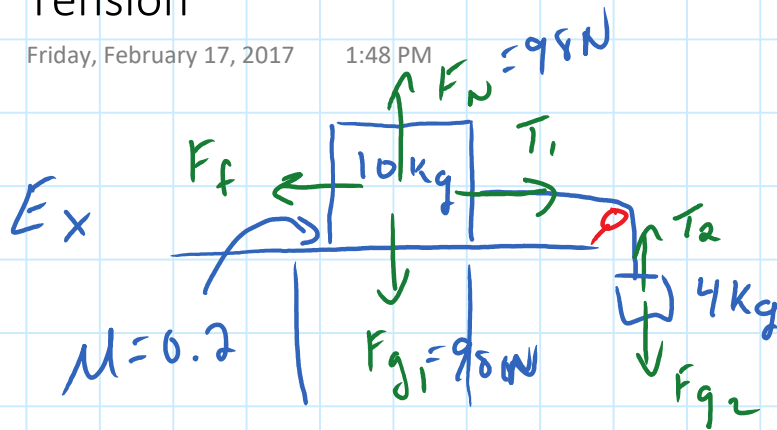


# Tension

Friday, February 17, 2017

1:48 PM



Find acc. and tension

$$T_1 = T_2$$

↓  
isolate  
one  
object!

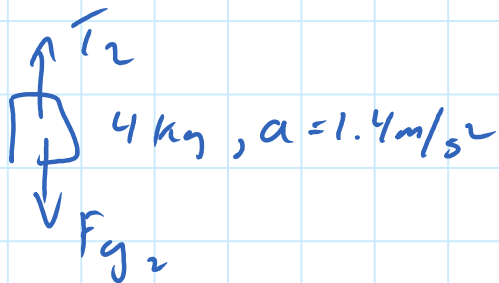
$$F_f = \mu F_N = (0.2)(98 \text{ N}) = 19.6 \text{ N}$$

$$F_{\text{net}} = F_{g2} - T_2 + T_1 - F_f$$

$$ma = m_2g - F_f$$

$$(14 \text{ kg})a = 39.2 \text{ N} - 19.6 \text{ N}$$

$$14a = 19.6, \quad a = \frac{19.6}{14} = 1.4 \text{ m/s}^2$$

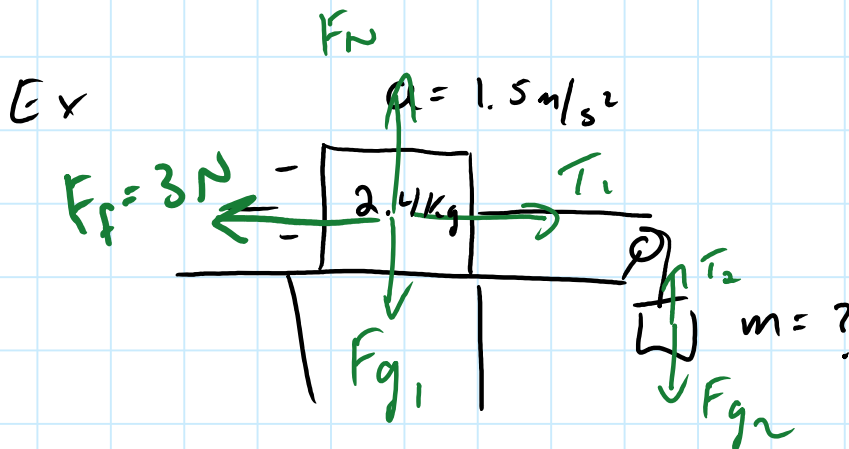


$$F_{\text{net}} = F_{g2} - T_2$$

$$ma$$

$$4(1.4) = (4)(9.8) - T_2$$

$$T_2 = 33.6 \text{ N}$$



Find T and mass

72

Tension - isolate  $m_2$

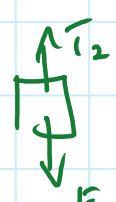
$$F_{net} = T_1 - F_f$$

$$ma$$

$$(24)(1.5 \text{ m/s}^2) = T_1 - 3 \text{ N}$$

$$T_1 = 6.6 \text{ N}$$

isolate  $m_1$



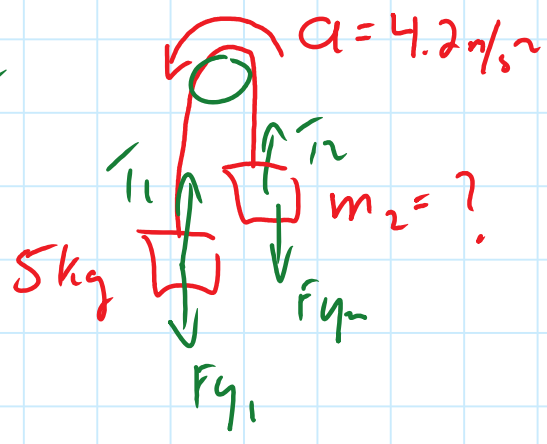
$$F_{net} = F_{g2} - T_2$$

$$ma$$

$$1.5 m_1 = 9.8 m_1 - 6.6 \text{ N}$$

$$m_1 = .80 \text{ kg}$$

Ex



$$F_{net} = F_{g1} - \cancel{T_1} + \cancel{T_2} - F_{g2}$$

$$F_{net} = F_{g1} - F_{g2}$$

$$ma$$

$$m_1 g$$

$$m_2 g$$

$$(5 + m_2)(4.2) = 49 \text{ N} - 9.8 m_2$$

$$21 + 4.2 m_2 = 49 \text{ N} - 9.8 m_2$$