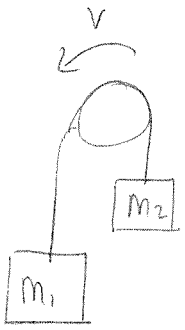
P #B

Ch 4 Worksheet

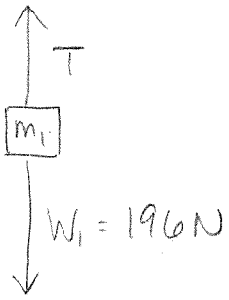
a) $m_1 = 20\ kg$
$m_2 = 15\ kg$

$W_1 = 196\ N$
$W_2 = 147\ N$

$F_f = 0$



For m_1:

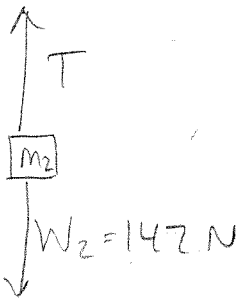


$F_{net} = W_1 - T = m_1 \cdot a$

$= 196\ N - T = (20\ kg) \cdot a$

$T = 196\ N - 20 \cdot a$

For m_2:



$F_{net} = T - W_2 = m_2 \cdot a$

$= T - 147\ N = (15\ kg) \cdot a$

Substituting:

$= [196 - 20a] - 147 = 15a$

$49 = 35a$

$\boxed{a = 1.4\ m/s^2}$

$T = 196\ N - 20 \cdot (1.4 m/s^2)$

$\boxed{T = 168\ N}$