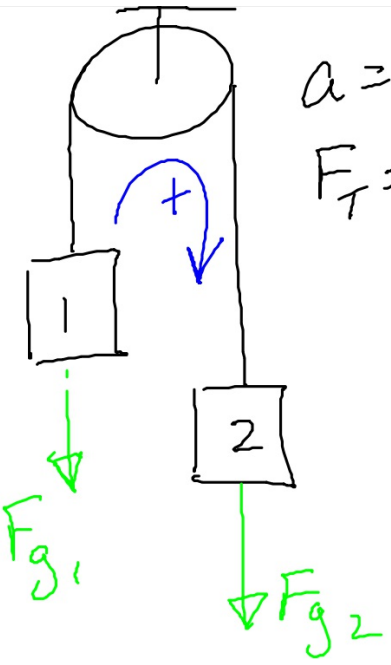
51.

$m_1 = 1.3\ kg$

$m_2 = 2.8 kg$



$a = ?$

$F_T = ?$

$$a = \frac{\Sigma F_{ext}}{m_{total}}$$

$$a = \frac{F_{g_2} - F_{g_1}}{m_1 + m_2}$$

$$a = \frac{27.4 - 12.74}{4.1}$$

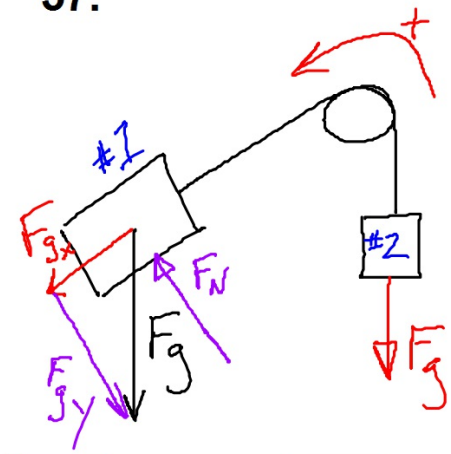
$a = 3.58\ m/s^2$

$F_T - F_g = m_1 a_1$

$F_T - 12.74 = 1.3(3.58)$

$F_T = 17.4\ N$

57. $a = ?$ $F_T = ?$



$$a = \frac{\Sigma F_{ext}}{m_{total}}$$

$$a = \frac{F_{g_{1x}} - F_{g_2}}{m_1 + m_2}$$

$F_{g_x} = mg\sin\theta$

$(3.7)(9.8)\sin 30°$

$$a = \frac{18.13 - 22.54}{6\,kg}$$

$a = -0.735\ m/s^2$

#2

$$a = \frac{F_T - F_g}{m}$$

$$-0.735 = \frac{F_T - 22.54}{2.3}$$

$F_T = 20.8\ N$

2.3kg mass

$a = 0.735\ m/s^2 \downarrow$

$F_T = ?$