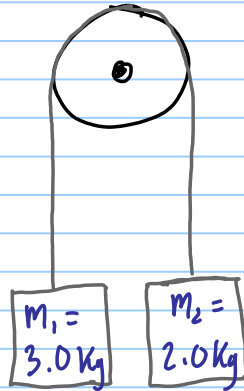


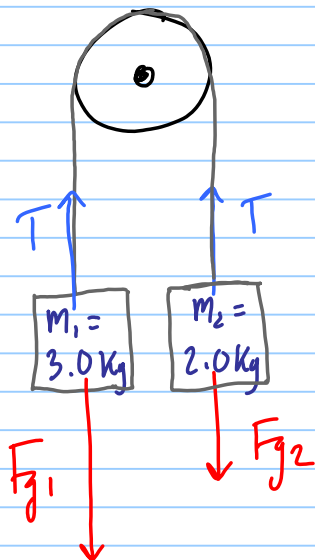
## Quiz 5b

Note Title

27/09/2012

Find the tension in the rope connecting the two masses over a frictionless pulley as shown.





$$F_{g1} - F_{g2} = m_+ a \quad \checkmark$$

$$a = \frac{F_{g1} - F_{g2}}{m_+} = \frac{m_1 g - m_2 g}{m_+} \quad \checkmark$$

$$= \frac{(3.0)(9.8) - (2.0)(9.8)}{5.0} = 1.96 \text{ m/s}^2 \quad \checkmark$$

OR

$$\overset{m_1}{F_{g1} - T = m_1 a} \quad \checkmark$$

$$\begin{aligned} T &= F_{g1} - m_1 a \\ &= m_1 g - m_1 a \\ &= (3.0)(9.8) - (3.0)(1.96) \\ &= \boxed{24 \text{ N}} \quad \checkmark \end{aligned}$$

$$\overset{m_2}{T - F_{g2} = m_2 a} \quad \checkmark$$

$$\begin{aligned} T &= m_2 a + F_{g2} \\ &= (2.0)(1.96) + (2.0)(9.8) \\ &= \boxed{24 \text{ N}} \quad \checkmark \end{aligned}$$