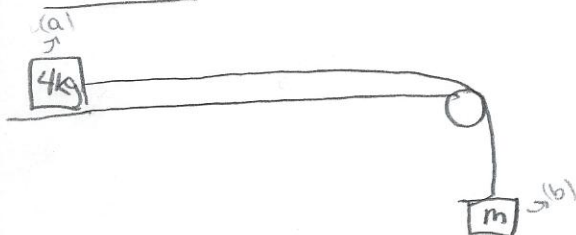
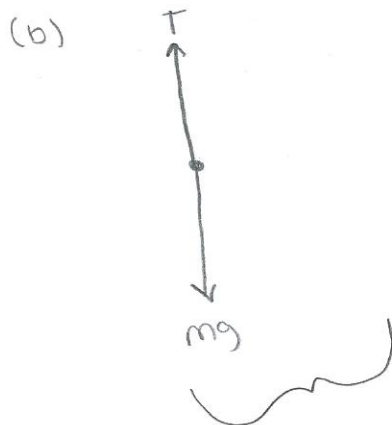
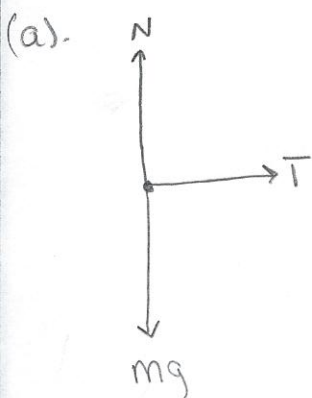


5.17



FBD



$$\sum F_y = N - mg$$

$$N - mg = 0$$

$$\sum F_x = T$$

$$T = ma_x$$

$$10N = (4kg)(a)$$

$$a = \frac{10N}{4kg} = 2.5 \frac{m}{s^2} = a$$

c).

$$\sum F_x = 0$$

$$\sum F_y = T - mg$$

$$T - mg = ma_y$$

Since it is a massless, frictionless pulley,
 $a_y = a = 2.5 \frac{m}{s^2}$?

$$T - mg = ma_y$$

$$T = ma_y + mg$$

$$T = m(a_y + g)$$

$$10N = m(2.5 + 9.8)$$

$$\frac{10N}{12.3} = \frac{12.3m}{12.3}$$

$$m = .813 kg$$

THIS ANSWER
IS WRONG, BUT