

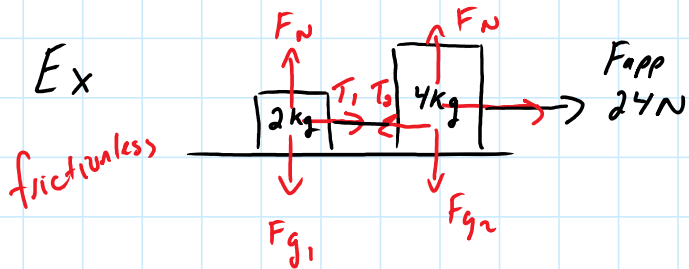
Newton's 3rd Law

Thursday, April 12, 2018 9:05 AM

1) $F_{net} = 0$

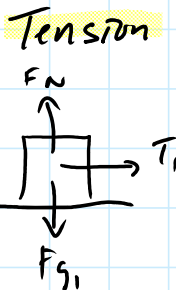
2) $F_{net} > 0$

3) For every action force, there is an equal, but opposite, reaction force.



Find the acc: Tension in the rope

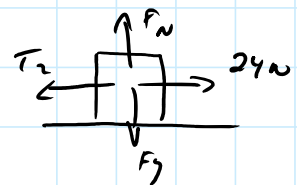
Isolate one object to solve for



$$F_{net} = T_1$$

$$ma$$

$$(2kg)(4m/s^2) = T = 8N \text{ (right)}$$



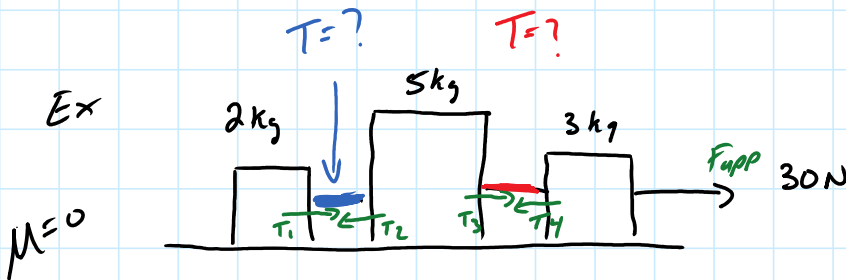
$$F_{net} = 24N - T_2$$

$$ma$$

$$(4kg)(4m/s^2) = 24 - T_2$$

$$16N = 24 - T_2$$

$$T_2 = 8N \text{ (left)}$$



$$F_{net} = F_{app} - T_4 + T_3 - T_2 + T_1$$

$$ma = 30N$$

$$(10kg)a = 30N \quad a = 3.0m/s^2$$



$$F_{net} = T_1$$

$$ma = T_1$$

$$2(3) = T_1 = 6N$$



$$F_{net} = 30 - T_4$$

$$ma = 30 - T_4$$

$$3(3)$$

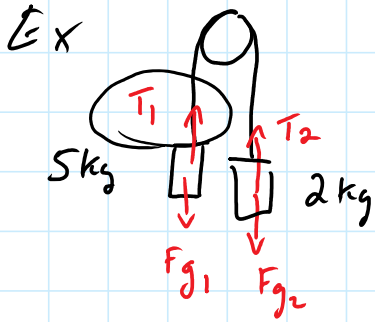
$$9N = 30 - T_4$$

$$T_4 = 30 - 9$$

$$T_4 = 21N$$

$$2(3) = T_1 = 6N$$

$$3(3) \\ 9N = 30 - T_4$$



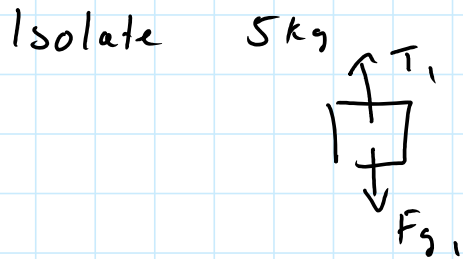
Find a, T

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

$$ma = 49N - 19.6N$$

$$(7kg)a = 29.4N$$

$$a = 4.2 m/s^2$$



$$F_{net} = F_{g1} - T_1$$

$$ma$$

$$(5kg)(4.2) = 49N - T_1$$

$$21N = 49N - T_1$$

$$T_1 = 49N - 21N \\ = 28N$$