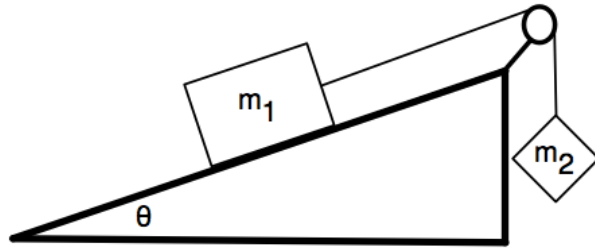HW#5: Forces- Newton's 2nd Law (2-body)

1. For the pict solve for tension & acceleration of the system without friction if: $m_1 = 5$ kg, $m_2 = 3$ kg, and $\theta = 30°$. [T = 27.6 N]

2. For the pict solve for tension & μ of the system if, $m_1 = 7.5$ kg, $m_2 = 10$ kg, $\theta = 37°$, and $a = 1.25$ m/s². [$\mu = 0.54$]

3. For the 2nd pict if $\theta = 30°$, $M_a = 10$ kg, $\mu = .3$, and the acceleration of the system is 1.2 m/s², what is the tension in the string and the mass of M_b. [T = 41.4 N]

4. For the 2nd pict if $\theta = 37°$, $M_a = 10$ kg, $M_b = 22$ kg, and $\mu = .25$, what is the tension in the string and the acceleration of the system.
[T = 43.8N]

5. For the 2nd pict if $\theta = 45°$, $M_a = 5$ kg, $M_b = 8$ kg, and the acceleration is 1.5 m/s² ,what is the tension in the string and μ of the system. [T = 24.4 N]

6. For the 2nd pict if $\theta = 30°$, $\mu = 0.1$, $M_b = 10$ kg, the acceleration is 1.25 m/s² , what is the tension in the string and M_a of the system. (figure it out yourself)