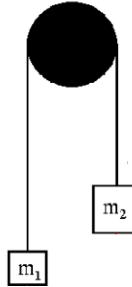


The Atwood Machine

The Atwood machine was invented by George Atwood as an experiment to verify the laws of acceleration. The experiment consists of two masses, m_1 and m_2 where $m_2 > m_1$ and the string and pulley (negligible friction and mass). For the purpose of this experiment, ignore the effects of air resistance and friction.



1. Draw a force diagram for each mass and write a net force equation that describes the net force relative to the forces on each mass. Be sure to include direction!
2. How does the tension on m_1 compare the to the tension force acting on m_2 ? Create an equation that describes the relationship and explain in a complete sentence how you came to this conclusion.
3. Solve for the acceleration of each block in terms of m_1 , m_2 and g using your equations from #1 and #2

4. If m_2 was increased and m_1 stayed the same, how would the acceleration be affected?
5. What value of m_1 and m_2 would produce equilibrium? Where do you see this in your calculations?
6. If $m_1 > m_2$ how would this affect the acceleration and motion of the system?