

**AP Physics B**  
**Lab Activity: Pulleys**

Purpose: To determine tension and acceleration values in situations involving pulleys and objects connected by strings.

Background:

- assumptions:
  - ideal strings (i.e., no mass)
  - ideal pulleys (i.e., no mass, no friction)
  - frictionless incline

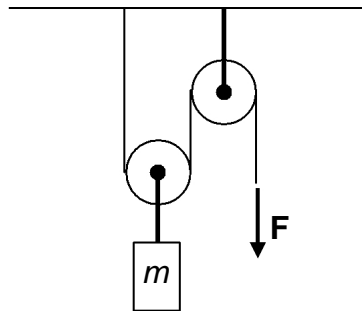
Materials: ring stands, clamps, metal track, angle indicator, electronic balance, super pulleys, stopwatch, string, assorted masses

Procedure:

- 1) Answer the questions posed in each situation.
- 2) Check your answers experimentally.

**Situation 1:**

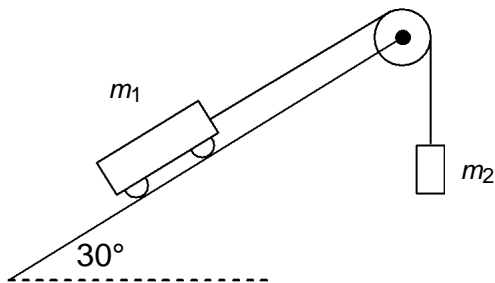
- (a) find the tension in the lower cord
- (b) find the force **F** needed to just barely lift the weight off of the ground
- (c) find the tension in the upper cord



$m = \underline{\hspace{2cm}}$

**Situation 2:**

- (a) find the tension in the string
- (b) find the acceleration of the hanging mass



$m_1 = \underline{\hspace{2cm}}$

$m_2 = \underline{\hspace{2cm}}$