Slow Roller

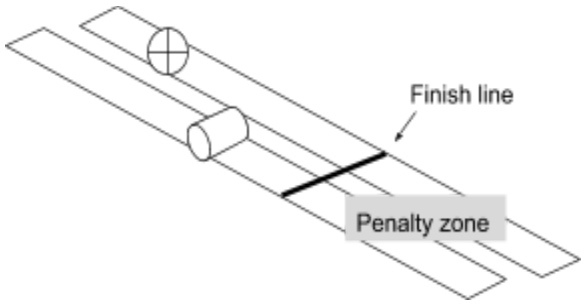
Objective:

To determine where to release a slower rolling object so that, when released simultaneously on an incline, a faster rolling object will overtake the slower rolling object at the designated finish line. This is a linear acceleration event; students are *not* expected to calculate rotational quantities.

Rules:

1. Each team will be stationed at a pair of inclines and given two objects that roll with different accelerations. Objects have been designed to roll slowly.
2. Teams will be supplied with stopwatches, metersticks, markers, and calculators.
3. After all data is collected, the students will return both objects to the judges and then will be given the finish line and the starting position for the faster object.
4. The team must calculate where the slower object should be released, to the nearest thousandth of a meter, and record this value on the score sheet. The score sheet is then returned to the judges.
5. When ready, the team will ask the judges to return the objects and team members will place the faster object on the designated starting position and the slower object at the team's calculated postition.
6. After a countdown, the objects will be released simultaneously.
7. If the faster object overtakes the slower object before the finish line, the team's score will be the difference between the finish line and the actual overtaking location. However, if the faster object overtakes the slower object farther than the finish line, the team will be assessed a penalty and the team's score will be twice the difference between the finish line and the actual overtaking location.
8. The lowest score wins.

Tiebreaker: The shortest time will serve as a tiebreaker. A team's time will be measured from the moment the team is given its equipment until the team submits their score sheet.



Time limit: 15 minutes.