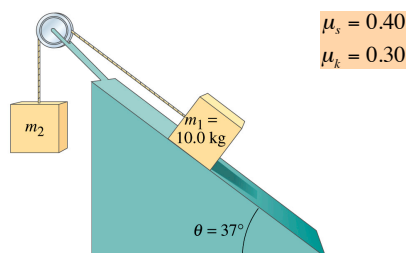


Example: inclined plane with friction

- (a) What range of masses m_2 keeps the system at rest?
 (b) If $m_2 = 10$ kg, what is the acceleration of the system?

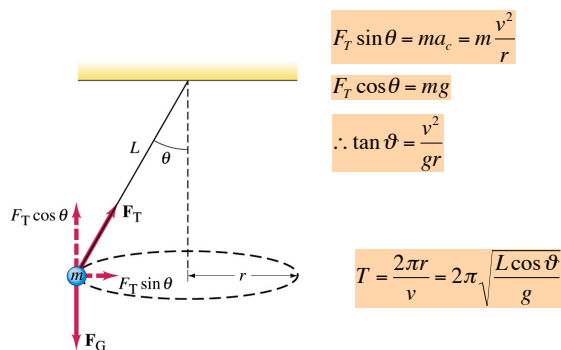


Example: centripetal force

A coin is placed on the outer edge of a turntable of radius 15 cm, rotating at $33\frac{1}{3}$ rpm. What is the smallest coefficient of static friction needed to keep the coin from flying off the turntable?

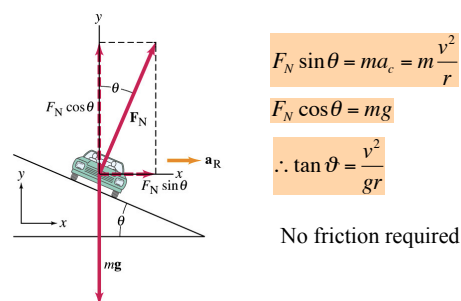
Conical (or spherical) pendulum

The tension in the string provides an inward centripetal force:



Banked turns

Completely analogous to conical pendulum. The normal force plays the same role as the tension in the string, providing an inward centripetal force.



Midterm exam

- Thursday, February 11, 7:00-9:00 p.m.
- Bring calculator (no text storage), pencil
- Turn off or silence cell phones
- Bring student card. Put face up on desk.
- Last names
 - A-D: go to 111 Armes
 - E-O: go to 208 Armes
 - P-Z: go to 205 Armes
- Paper A: answers in #1-18 of column 1
- Paper B: answers in #41-58 of column 2

Some advice on studying physics

- Keep up with your studies. Do homework problems as you go.
 - understanding concepts takes time
 - cramming "facts" at the last minute won't help you
- Understand previous concepts before trying to learn new ones.
 - like building a house from the foundation up
 - e.g. $F = ma$ is the only new equation in chapter 5.
- Join or form a study group.
 - Studies find this is the best predictor of success
- Don't try to memorize your way through the course.
 - University-level physics is not "plug and chug"
- Don't think you already know the material at the right level.
 - Greater depth than high-school level physics