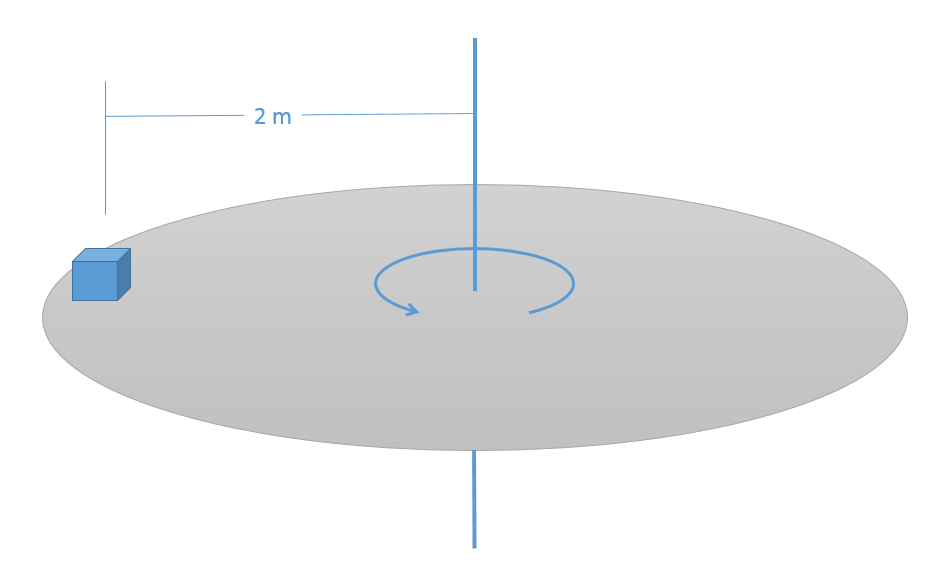
Chapter 12 Homework Problems

Problem 12.1

A 1 kg block sits on a rotating table as shown below. If the static coefficient of friction is assumed to be .4, what is the maximum angular velocity () that can be achieved before the block begins to slip?

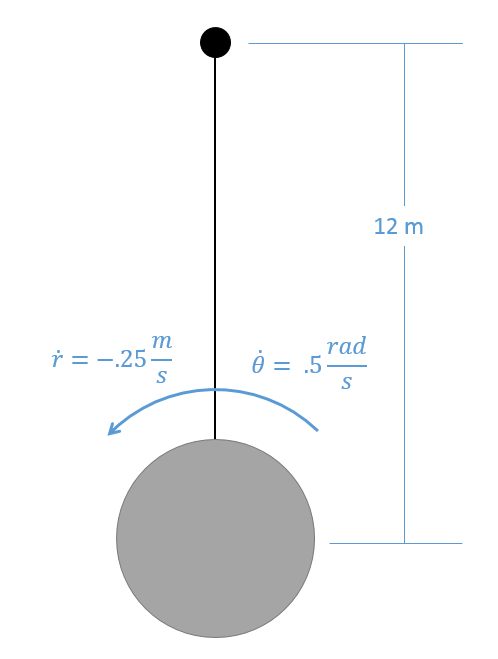
(Solution: )

Problem 12.2

A 5 kg instrument is held via a cable to a space station. The instrument and space station are both rotating at a rate of .5 rad/s when the space station begins retracting the cable at a constant rate of .25 m/s.

1. What is the tension in the cable at this instant?
2. What will the angular acceleration of the cable be ()?

(Hint: there are no forces in the theta direction)



(Solution: T = 15 N, )