

Paper Homework No. 11 (Spring 2018)

PHYS 205A: University Physics

Due date: Friday, 2018 Apr 27, 12.00pm, in class

(Name)

(Signature)

Instructions

1. Your submission should include only this page. Other forms of submissions will not be accepted. Please print this page, and write your solution on the back side.
2. Show your thought process in detail and organize it clearly.
3. Make sure your answer has the correct units and the right number of significant digits.

Question

A merry-go-round, in the shape of a disc, is free to rotate (without friction) about its symmetry axis. (It has mass $M = 100.0$ kg, radius $R = 2.00$ m, and moment of inertia $I = \frac{1}{2}MR^2$.) A kid (mass $m = 25.0$ kg) walks from the outer edge of the disc to the center. If the angular speed of the merry-go-round was $\omega_i = 0.30$ rev/s when the kid was at the outer edge, what is the angular speed of the merry-go-round when the kid is at the center?