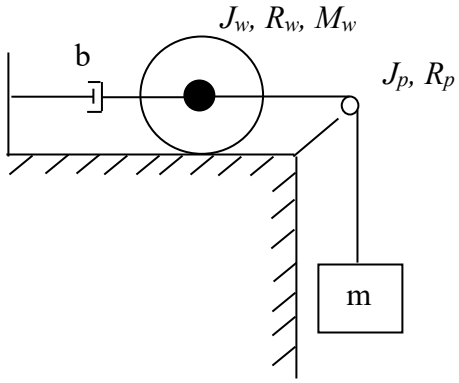
MECH 3140: Homework #3

Problems should be worked by Friday 9/8/23

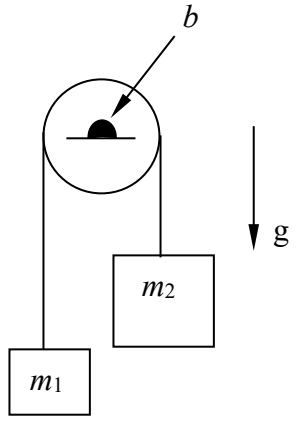
Palm, 3rd Edition: Chapter 6, Problems 1, 5, 9, 10, 13
Palm 4th Edition: Chapter 6, Problems 1, 5, 10, 11, 14
Provide the Time Constant for each problem

1) Find the Time Constant for the following problem (assume the wheel does not slip and pulley has inertia J_p, and radius R_p). Assume that the wheel has inertia J_w, mass M_w, and radius R_w.



Supplemental Problems:

Palm, 3rd Edition: Chapter 6, Problems 4, 6, 8, 12
Palm 4th Edition: Chapter 6, Problems 4, 6, 9, 13
Provide the Time Constant for each problem

2) Find the Time Constant for all problems in HW#2

3) Assuming the pulley with radius R and mass moment of inertia J starts from rest, and $m_2 > m_1$, determine how long until the masses reach a steady state velocity?