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?