Crane Lab Write-up
(Due Friday of Week 10)

Names: _____, _____, _____

Objective:

You will analyze the swinging crane problem in three different ways:

1. Simulation in Working Model (Lab 4)
2. Analytically (Problem CP-1 in Homework 10)
3. Experimentally (Lab 5)

You will be required to submit the following:

1. A printout of your Lab 5 Excel spreadsheet, complete with experimental data and plots of the (average) final angular velocity ω of the pendulum as a function of the distance L_{wcg} for both move strategies.
2. A printout of your Lab 4 Excel spreadsheet, complete with Working Model simulation data and plots of the final angular velocity ω of the pendulum as a function of the distance L_{wcg} for both move strategies.
3. A snapshot of your Working Model simulation.
4. A **COPY** of your solution to Problem CP-1 from Homework 10. (Don't forget to turn in the original with Homework 10!)

In addition to the above, attach a thoughtful discussion that addresses the following questions:

1. Is there a difference between the experimental and theoretical result for the optimal location? If so, what may have been the cause(s) for this discrepancy?
2. Compare your experimental results from Lab 5 to those from your Working Model simulation in Lab 4. How do your plots of the pendulum's final angular velocity ω as a function of the distance L_{wcg} generated by experimental data compare to your plots from Working Model simulation data? If there is a difference, what may have been the cause(s)?