Lab 5 - Pre Lab

ME 451 - Introduction to Instrumentation and Measurement Systems, Spring 2019

Complete the following questions for Lab 5 and submit your answers through Gradescope.

## Pre Lab Resources

1. [PID basics 1](https://www.pc-control.co.uk/feedback_control.htm)
2. [PID basics 2](https://www.csimn.com/CSI_pages/PIDforDummies.html)
3. [PID in more depth](http://eprints.gla.ac.uk/3815/1/IEEE_CS_PID_01580152.pdf)
4. [Practical tuning methodologies](https://robotics.stackexchange.com/questions/167/what-are-good-strategies-for-tuning-pid-loops)
   * Focus on the answer by [hauptmech](https://robotics.stackexchange.com/users/184/hauptmech) and its comments

## Pre Lab Questions

1. PID:
   1. What is bang-bang control?
   2. What does PID do?
   3. What does PID calculate?
   4. What does the P component do? What effect does it have on the system?
   5. What does the I component do? What effect does it have on the system?
   6. What does the D component do? What effect does it have on the system?
2. Constant Tuning
   1. How does the Ziegler-Nichols tuning method work?
   2. How does the given practical method differ?