Lab 4 - Pre Lab

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

Complete the following questions for Lab 4 and submit your answers through Gradescope.

## Pre Lab Resources

* [Comprehensive Encoder Tutorial](https://www.youtube.com/watch?v=oLBYHbLO8W0) (captioned version available on Canvas)
* [LM298 Motor Driver tutorial](https://tronixlabs.com.au/news/tutorial-l298n-dual-motor-controller-module-2a-and-arduino)

## Pre Lab Questions

1. Encoders
   1. How does an encoder work? What is a quadrature encoder?
   2. How can you tell the direction of spin with a quadrature encoder?
   3. Do you want use polling or interrupts to read an encoder?
2. Motor Drivers
   1. How does the motor driver work? Why do we need one?
   2. What is an h-bridge? Why should we use one?
   3. What pins do you have to setup if you wanted to drive one DC motor with an Arduino Uno?