Data collected from parts 2, 3, and 4 are well within manufacturer specification excluding the erroneous damping coefficient (or more accurately – the damping coefficient which included the higher frictional force within the motor).

The experimental damping coefficient has error caused by using an older motor, and friction within the system. The friction within the system was neglected, but it turned out that it plays a big role in the results of the analysis.

The experimental gain is less than expected, which actually makes sense because the damping ratio is higher. In this case, it makes sense that the PI controller has a slower response time compared to the proportional controller.

Our results stated that the proportional response was the fastest – at the cost of a higher error level. The integral response was slower, but had less steady state error than the proportional control. Where the proportional-integral control system provided the lowest error with the second highest speed.

For future research, the frictional forces and other motor properties should be looked at closer if a higher degree of accuracy in the results is required.