Lab 5

Compare the results from Labs 1 through 4

Procedure

Fill in the following chart:

	P	I	D	Approximate Decay Ratio	Disturbance Response Comments
Lab 1	9	28	14		
Default Tuning Constants				Decay Ratio = 0.5 Long time to steady state	Drop in Temp = 4 C Deg. Recovery to first crossing = 113 sec
Lab 2	3	48	12		
Optimum Tuning Constants generated from ZNOL Autotune				Decay Ratio = 0.14 Short time to steady state	Drop in Temp = 2 C Deg. Recovery to first crossing = 70 sec
Lab 3	9	28	14	Extremely long time to steady state. First pk at 38 deg C. First crossing of set point at 400 sec. More then 40 minutes to steady state.	
Default Tuning Constants					Not Applicable as disturbance fixed at 100%
Lab 4	1	92	23	About 20 minutes to completely come to steady state. First crossing around 400 sec. First peak about 36 deg C. Second peak was undetectable above 35 deg C	
Optimum Tuning Constants generated from ZNOL Autotune					Not Applicable as disturbance fixed at 100%

Conclusion:

Using ZNOL Autotune significantly improves control.

In both slow and fast processes, using Autotune improves response to Set Point and disturbance changes.