Follow-Up Questions on Exam 1

- When do you start timing in order to get the dead time?
- Which causes a faster response in the controlled variable?
  - Manual control with step function to final value of controller
  - Properly tuned controller
- For a change in setpoint, does the final controller output for manual control equal the final controller output for a PI or PID controller?
- For a change in setpoint, does the controller output for a properly tuned PI or PID controller ever exceed the final controller output of a manual controller?
- For a setpoint change, when does the controller output start to change?
- For a setpoint change, how do you calculate the initial value of a PI controller output (at time $\cong 0$)?
  - What is the governing equation?
  - What is the value of the error ….. $e(t=0) = ?$
  - What is the value of u_{bias}?
  - What is the value of the integral?