1. Items done this session:
Adding a new PD control feedback system to replace the single sin-wave in the previous lab.
In this feedback system, the H(s) is a over-simplified form of the real system.
In order to find the appropriate Kp and Kv, we're going to formulate the damping ratio Zeta and natural frequency Wn of the second order system using equation
(1). Zeta = (ln(OP)^2/(pi^2+ln(OP)^2))^(1/2), where OP is overshooting percentage of 0.05 and
(2). Wn = pi/(tp*(1-Zeta^2)^(1/2)), where tp is peak time of 0.15
Given the Overshooting ratio 0.05 and peak time 0.15, we'll get Zeta = 0.69 and Wn = 23.9398.
The next step is to find the relation between Zeta, Wn and the Kp, Kv.

2. Items for next session:
Find the characteristic parameters of the second order system to calculate Kp and Kv.