ECE446/546 Project 1

Deliverables:

- All Bode plots should be obtained using the Matlab 'margin' command.
- All Matlab code used needs to be included in an Appendix
- The loop bandwidth for all three designs should be the same
- Step load change referred to below is 0.1A to 5A to 0.1A
- Step input voltage change referred to below is 28V to 30V to 28V

Design 0: Open loop converter
   a) Loop gain (compensator gain in unity)
   b) Open loop output impedance
   c) Open loop audio-susceptibility
   d) Pecs response to step load change
   e) Pecs response to step input voltage change

Design 1: Passive Droop Control
   a) Pecs schematic
   b) Steps in obtaining your compensator design values
   c) Loop gain Bode plot
   d) Closed loop output impedance (together with open loop response on same plot)
   e) Closed loop audio-susceptibility (together with open loop response on same plot)
   f) Pecs response to step load change
   g) Pecs response to step input voltage change

Design 2: Active Droop Control
   a) Pecs schematic
   b) Steps in obtaining your compensator design values
   c) Loop gain Bode plot. Show the three loop gains on the same figure
   d) Closed loop output impedance (together with open loop response on same plot)
   e) Closed loop audio-susceptibility (together with open loop response on same plot)
   f) Pecs response to step load change
   g) Pecs response to step input voltage change

Design 3: Single Loop Control
   a) Pecs schematic
   b) Steps in obtaining your compensator design values
   c) Loop gain Bode plot.
   d) Closed loop output impedance (together with open loop response on same plot)
   e) Closed loop audio-susceptibility (together with open loop response on same plot)
   f) Pecs response to step load change
   g) Pecs response to step input voltage change