Announcement:
Reading Week #7: Review Schwarz and Oldham 4.1, 4.2, 4.3
Topics: Circuit Analysis with dependent sources and operational amplifiers.

7.1 Dependent Sources Use the circuit to the right. The dependent source on the graph is $A(V_+ - V_-)$

a) Find $V_o$
b) Is the gain $(V_o/V_{IN})$ greater than unity?

7.2 Ideal Op-Amp Use the circuit to the right.

a) Find $V_{out}$ in terms of $V_1$, $V_2$ and the resistances
b) Explain why the value of $V_{out}$ is independent of $R_L$
c) Explain why the value of $V_{out}$ is independent of $R_2$

7.3 Cascade Op-Amps Use the circuit to the right.

a) Find an expression for $V_{o1}$
b) Find an expression for $V_{o2}$

7.4 Dependent Sources Use the circuit to the right.
NOTE: VDD is a D.C. (constant) voltage source and thus does not need to be included in the analysis and in fact can be considered an a.c. ground that grounds the top end of the current source and $R_O$; Be sure to assume the output is shorted; Leave $R_O$ in your analysis (even though it is not present in the solution that you are not supposed to be looking at).
a) Use KCL, find $V_E$
b) Find the voltage across the AA’ terminal, $V_{test}$
c) Find the resistance seen looking into AA’