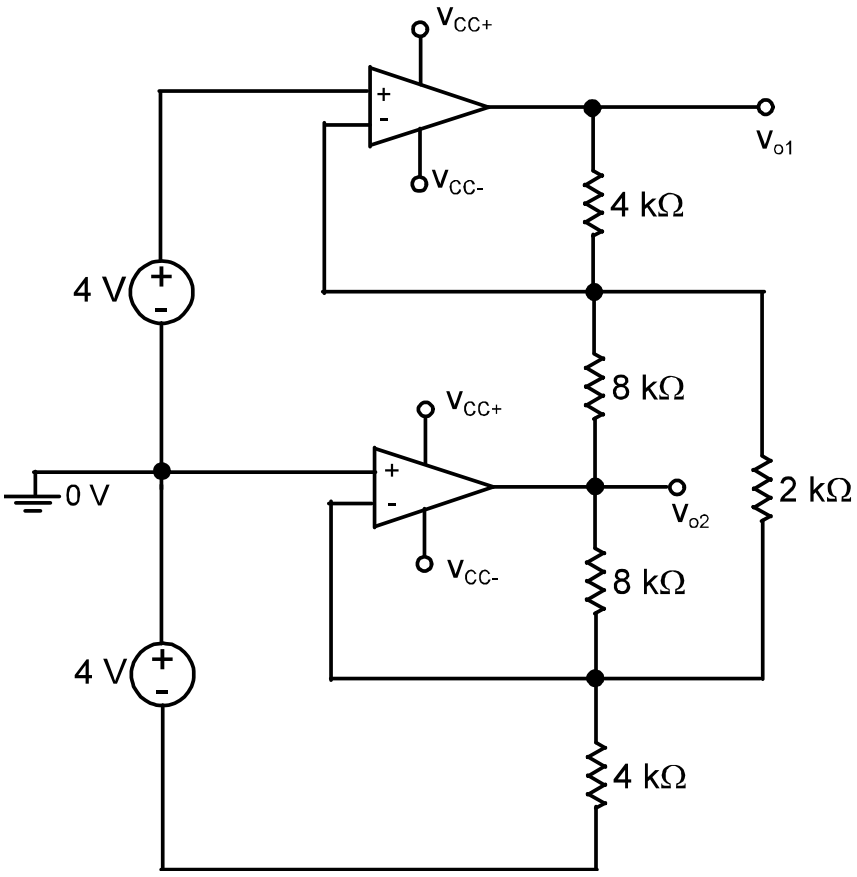
ROSE-HULMAN INSTITUTE OF TECHNOLOGY

ECE203 DC Circuits Spring 2016-2017

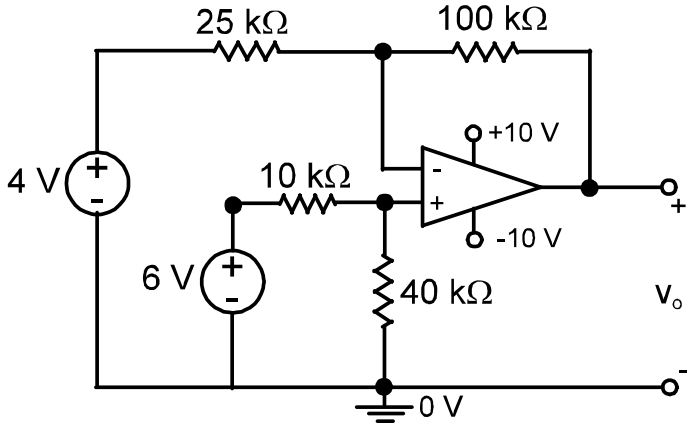
Homework Set #23
DUE Tuesday, May 9, 2017

1. Determine :
   a) V_{o1} & V_{o2}.
   b) The minimum absolute values of V_{CC+} and V_{CC-}.



2. Design (i.e. draw the diagram and insert all parameter values) a constant current amplifier that will output 2.5 mA over its operating range and is driven from a signal that has a Thevenin equivalent of 5 V and 25 kΩ. Assume the op amp is ideal and operates in its linear range. Specify the smallest value of $\pm V_{CC}$ if the largest load resistance is 5 kΩ.

3. a) Determine v_o for the following circuit. Assume the op amp and power supplies are ideal.



b) Determine CMRR if the worst-case values of the resistors are:
22.5 kΩ for 25 kΩ, 90 kΩ for 100 kΩ, 11 kΩ for 10 kΩ, 36 kΩ for 40 kΩ.