ELEC301 Problem Set #6

1. For the circuit in Figure 1, do the following:

a) Find the value of R_1 that will make $V_{C1} = V_{C2} = 2V$ and the value of R_2 that will make $V_{C3} = V_{C4} = 4V$.

b) Using the values for R_1 and R_2 found in part a above, calculate A_M if the output is connected to an 8kΩ load.

c) Using R_1 calculated in part a above, find the CMRR for the input stage assuming that the second stage has been disconnected, that $r_{o6} = 25k\Omega$ (r_o of Q_6), and that one of the 8kΩ resistors is, in fact, 7.992kΩ and the other is, in fact, 8.008kΩ.

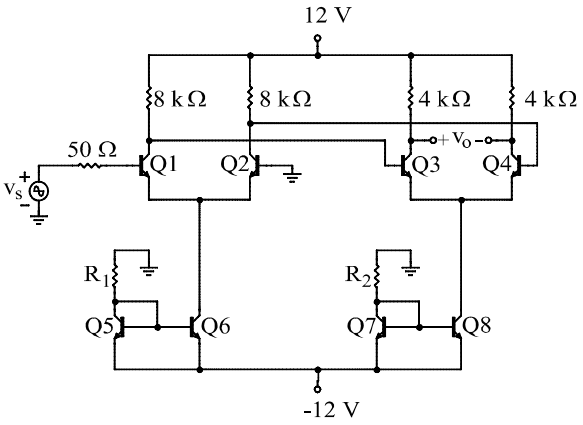

Figure 1.

2. For the circuit in Figure 2 calculate A_M for $\beta = 200$ for all of the transistors.

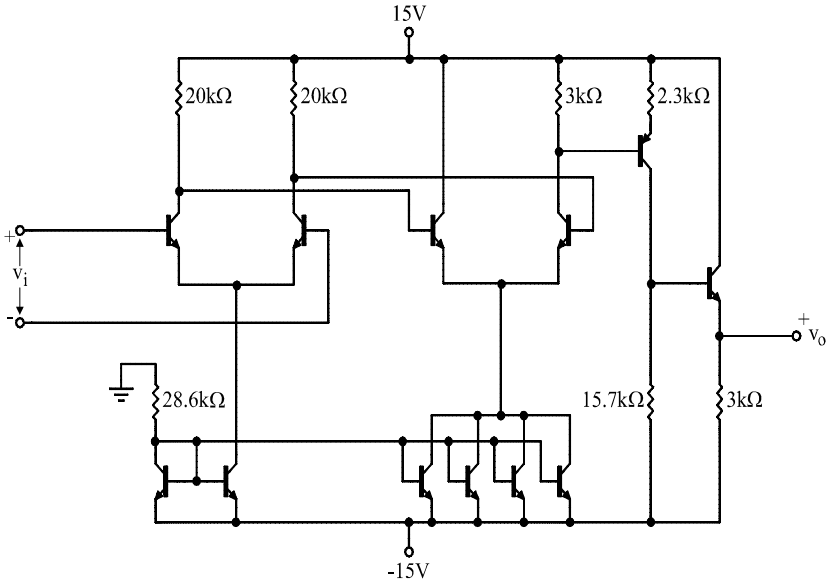

Figure 2