

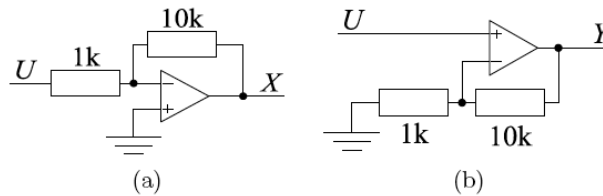
Design Engineering – DE1.3 Electronics 1

Problem Sheet 4 (Topics 9 - 11)

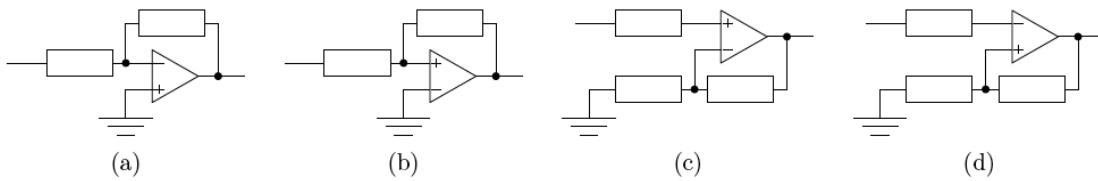
Key: [A] = easy [E] = hard

Note: A "dimensioned sketch" should show the values on the x and y axes corresponding to significant places on the corresponding graph.

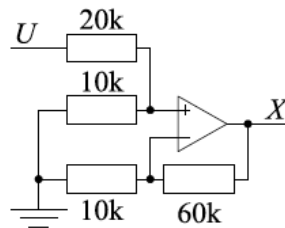
1. [B] Find the gains X/U and Y/U in the following circuits:



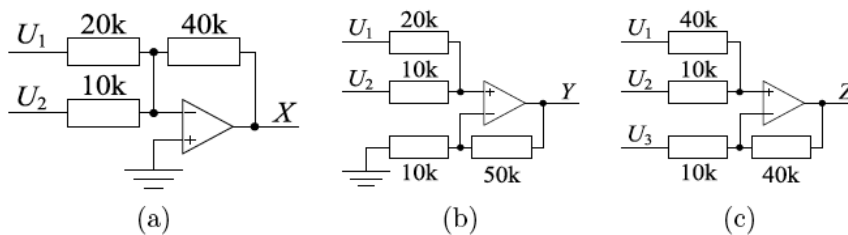
2. [C] State whether the feedback in the following circuits is positive or negative:



3. [C] Find the gain X/U in the following circuit:



4. [C] Find expressions for X , Y and Z in terms of U_1 , U_2 and U_3 .



5. [D] Choose values of R_1 and R_2 in circuit below so that $X = 2U_2 - 3U_1$:

