

EE4086 Quiz 1

January 28,1998

Professor Leach

Name_____

Instructions. Print your name in the space above and on all quiz work sheets. Place a box around all answers. Write the word “over” if you continue your work on another page.

1. Solve for v_o/v_i for the circuit in Figure P1.
2. For the circuit of Figure P2:
 - (a) Solve for v_o/v_i .
 - (b) Solve for the input resistance seen by the source.
 - (c) For what value of R_3 is the input resistance
 1. an open circuit?
 2. a short circuit?
3. In the circuit of Figure P3, it is given that $R_1 = 2 \text{ k } \Omega$, $R_2 = 3 \text{ k } \Omega$, $R_3 = 2 \text{ k } \Omega$, $R_4 = 6 \text{ k } \Omega$, and $V_I = 4 \text{ V}$. Solve for V_1 through V_5 .
4. For the circuit in Figure P4:
 - (a) Solve for the transfer function for V_o/V_i in terms of the circuit element symbols.
 - (b) Sketch and label the Bode magnitude plot for the transfer function. Assume the numerical values $R_1 = 10 \text{ k } \Omega$, $R_2 = \text{ k } \Omega$, $R_F = 20 \text{ k } \Omega$, and $C = 10 \text{ nF}$.

Figure P1.

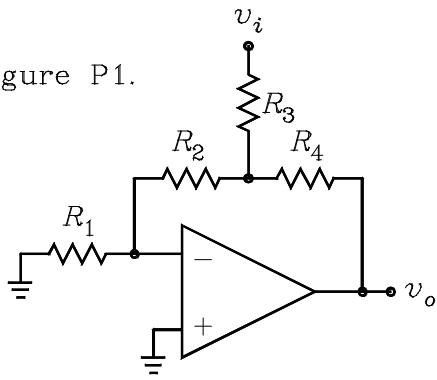


Figure P2.

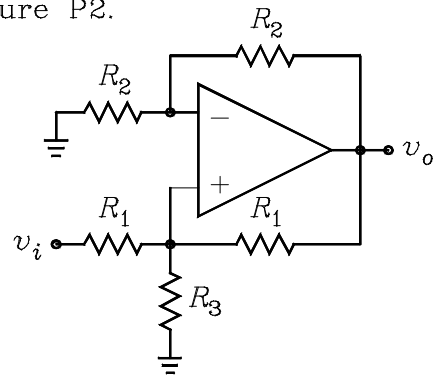


Figure P3.

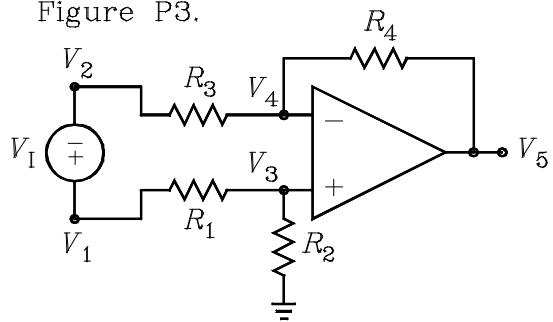


Figure P4.

