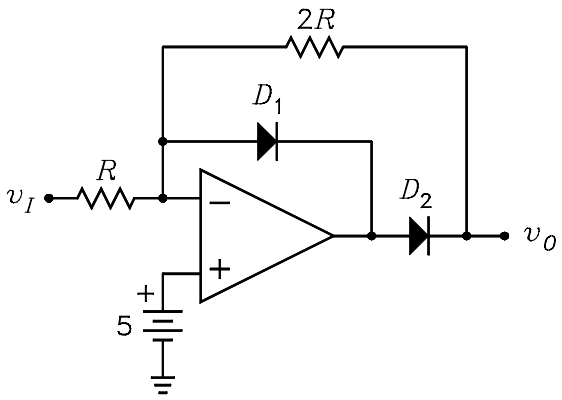
EE4086 Quiz 2

February 26, 1999

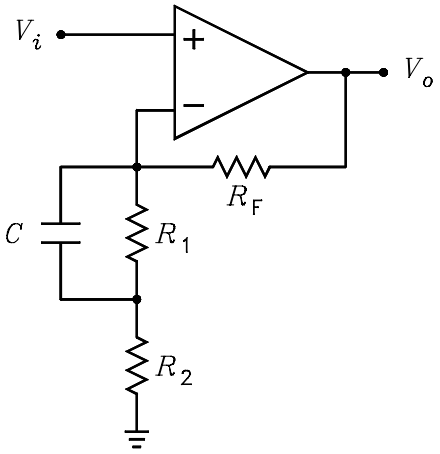
Professor Leach Name_____

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.

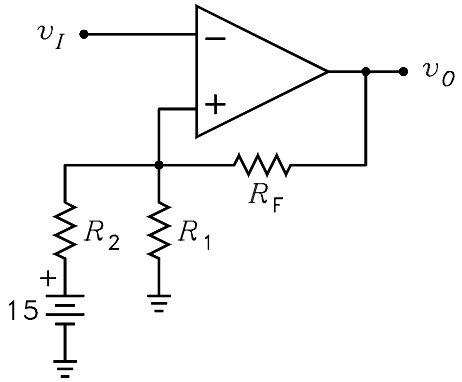
1. (a) Sketch and label v_O versus v_I for the circuit below. (b) Sketch $v_O(t)$ versus t if $v_I(t)$ is a triangle wave with peak values of ± 10 V.



2. (a) Solve for the transfer function for V_o/V_i. (b) Sketch the Bode magnitude plot. Solve for the gains on all zero slope asymptotes and give the expressions for all pole and zero frequencies in rad/s.



3. The circuit in the figure below has the values $R_F = 20$ kΩ, $R_1 = 10$ kΩ, and $R_2 = 68$ 10 kΩ. The op amp saturates at ±13 V. Sketch the graph of v_O versus v_I.



4. The op amp in the figure below has the open-loop transfer function

$$G(s) = \frac{V_o}{V_p - V_n} = \frac{\omega_x}{s}$$

(a) Solve for the transfer function for V_o/V_i. (b) What is the gain-bandwidth product for the amplifier?