HW 4

Posted Monday February 27

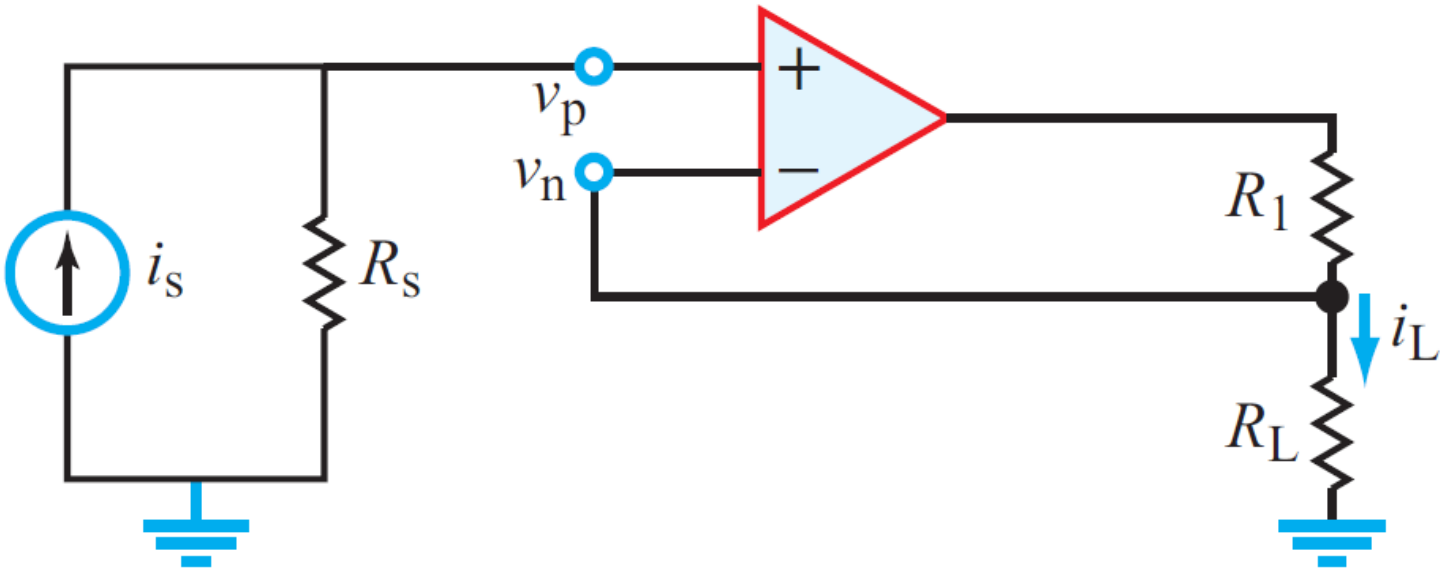
due Monday March 5th

EE40

Maharbiz

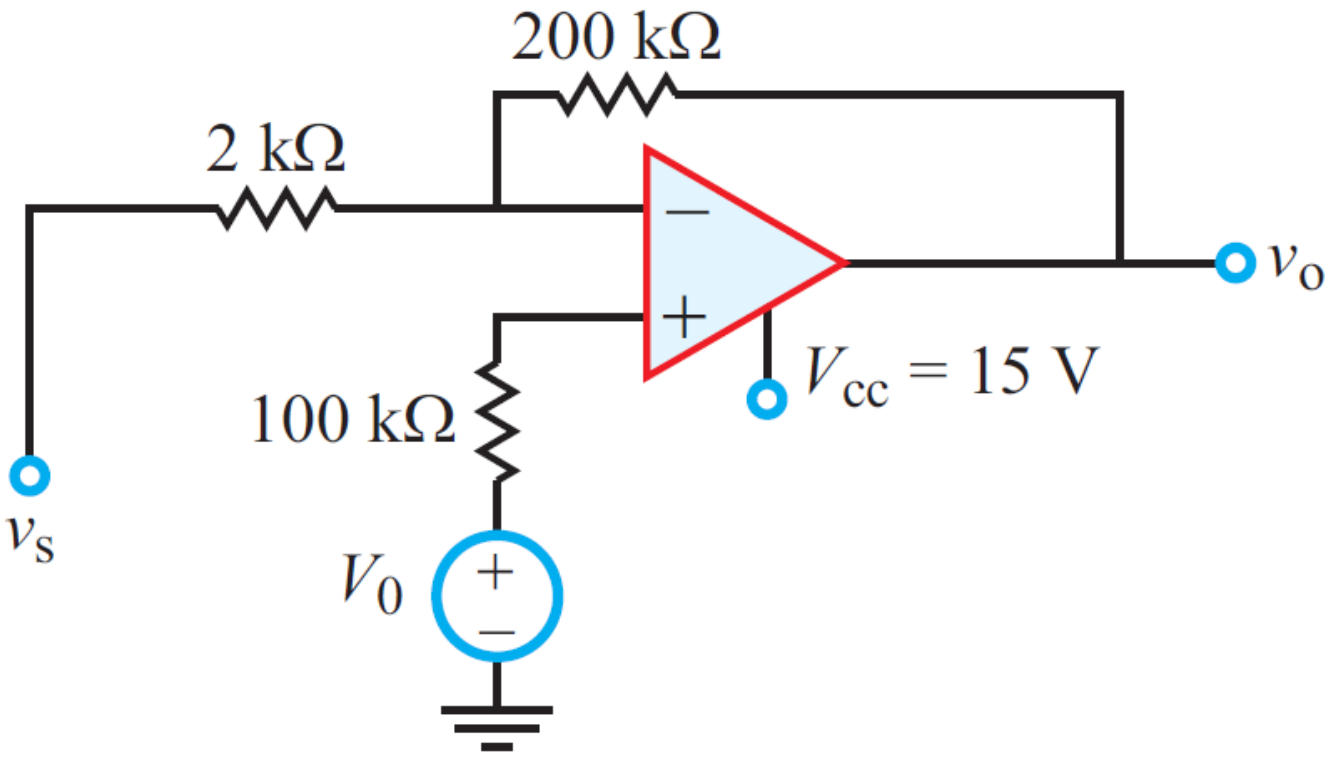
Spring 2012

1. For the op-amp circuit shown below:

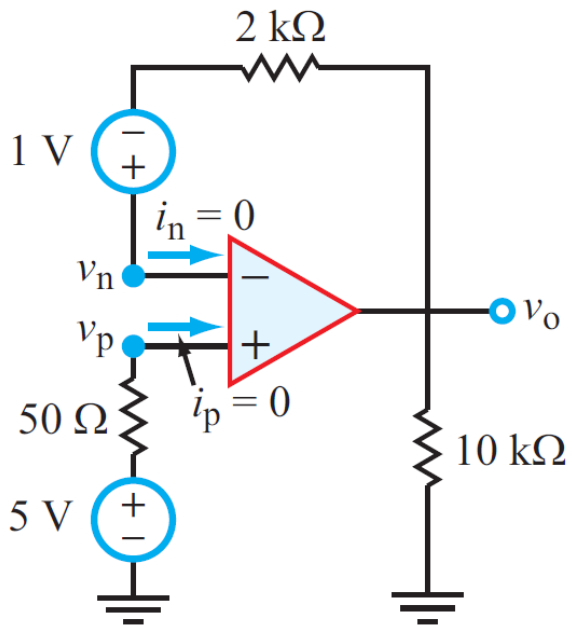


(a) Use the non-ideal op amp model (Figure 4-4 in the book) to develop an expression for the current gain $G_i = i_L / i_s$.
(b) Simplify the expression by assuming A → ∞, Ri → ∞, and Ro → 0).

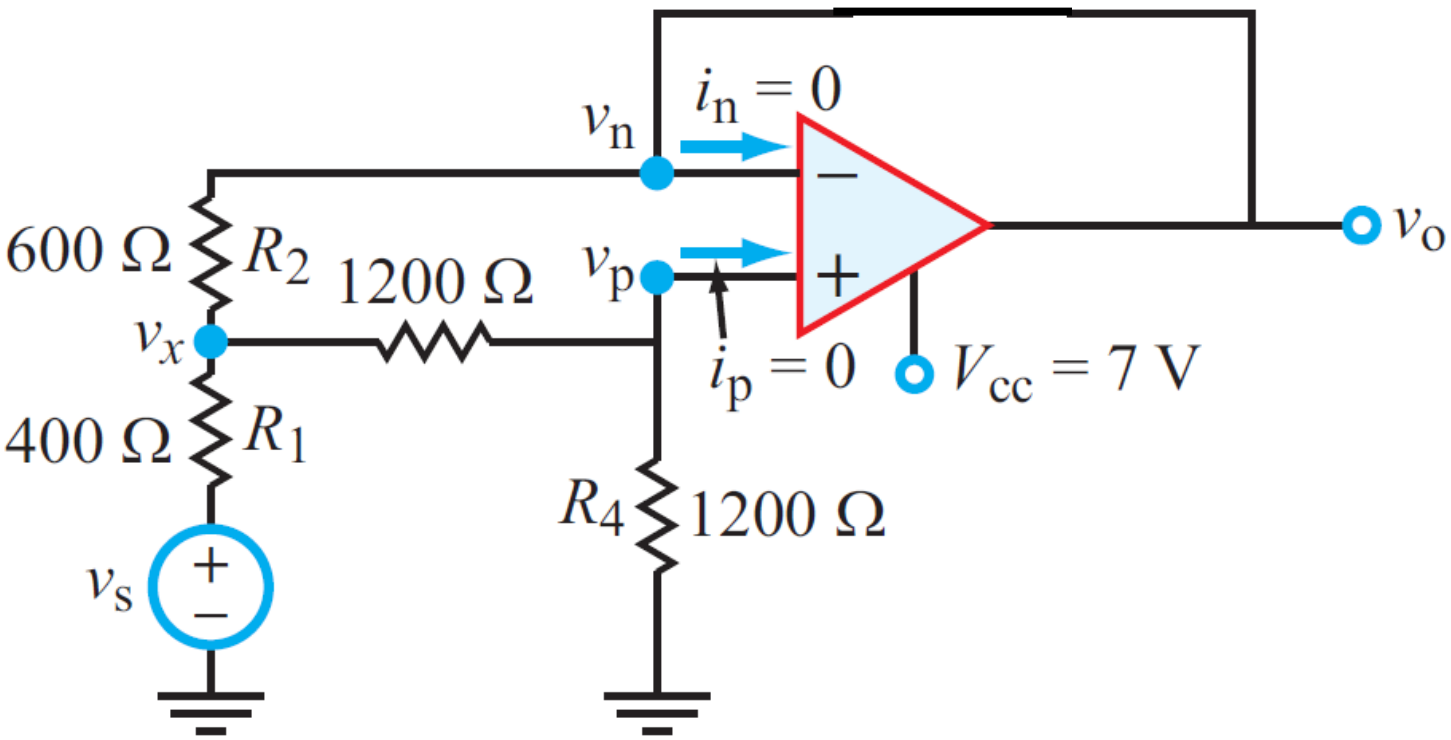
2. Determine the output voltage for the circuit below and specify the linear range for $\mathbf{v_s}$, given that $\mathbf{V_{cc}}$ = 15 V and $\mathbf{V_0}$ = 0.



3. Determine v_o across the 10-kΩ resistor in the circuit below.



4. Evaluate $G = v_0/v_s$ for the circuit below AND specify the linear range of v_s.



5. In the circuit below, op amp 1 receives feedback at its input from its own output as well as from the output of op amp 2. Relate v_o to v_s.