Procedure:
I recommend the following general steps when solving op amp circuit problems:
1. Write down the two Golden Rules.
2. Label nodes, currents and voltages on the circuit, and write the Golden Rules specifically for the circuit you are working on, using the labels you just marked.
3. Solve for values on the input (usually the left) side, or stage, of the op amp.
4. Determine which values from the input stage will also be part of the output stage of the circuit.
5. Solve for the remaining values in the output stage of the circuit.
6. Complete your solution by solving for, or simply identifying, the specific values requested in the problem statement.
7. Do not assume the output current is zero, even though the input current is defined to be zero.

Problem 1
Calculate $i_x$ and $v_0$ and find the power dissipated in the 30kΩ resistor.

![Circuit Diagram]

Problem 2
Find $i_o$ in the circuit below.

![Circuit Diagram]
Problem 3
Find $i_x$ in the circuit below.

![Circuit Diagram]

Very Important for our Op Amp lab on Oct 10

Problem 4: Given the two functions:

1) $f_1 = 50 \text{ feet}$ (a constant function)
2) $f_2 = 75 \cos(\omega t) \text{ feet}$

Sketch $f_1$, $f_2$ and the indicated $f_3$ by hand, very neatly (using the graph paper that is part of the EGR paper you use for your homework).

Sketch different graphs for parts a, b and c.

a) $f_3 = f_1 + f_2$

b) $f_3 = -f_2$

c) $f_3 = -(1/2) f_1 - (1/5) f_2$