1. Problem 5.32: $i_a = 600\mu A$, $i_o = -760\mu A$, $v_x = -3.2V$
2. Problem 5.33: $v_{01} = 15.85V$, $v_{02} = 13.6V$
3. Problem 6.21 20H
4. Problem 6.24 $6\mu F$
5. Textbook Problem 7.5: a) 0.2mA and 0.2mA, b) 0.2mA and –0.2mA,
   c) $0.2mAexp(-10^6t)$, d) $-0.2mAexp(-10^6t)$

6. PSPice Problem 3:
   a. Solve the Textbook Problem 5.40 parts a) and c) using PSpice. Provide hardcopy sheets for these two parts.
   b. For your Operational Amplifier, use one of the models below.
   c. Note that this operational amplifier contains an output resistance of Ro = 100 Ω and input resistance of $R_{IN} = 400$ k Ω
   d. Then use PSpice to determine the Thevenin equivalent output resistance. (Hint, review the Lecture notes on the operational current source). You may use a test voltage. Its value should be less than 15V. Why? Provide a hardcopy sheet showing current and voltage results that define the Thevenin Resistance and show a computation of the resistance value.

- We have two approaches for creating our non-ideal operational amplifier model. One with an "E" source, and one is implemented simply by the use of our ideal operational amplifier model. Both are shown below.
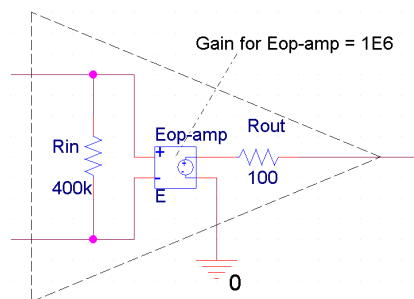

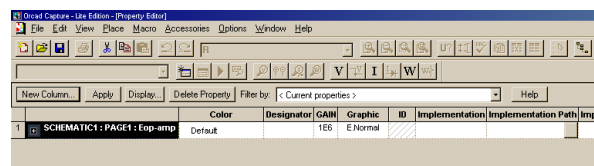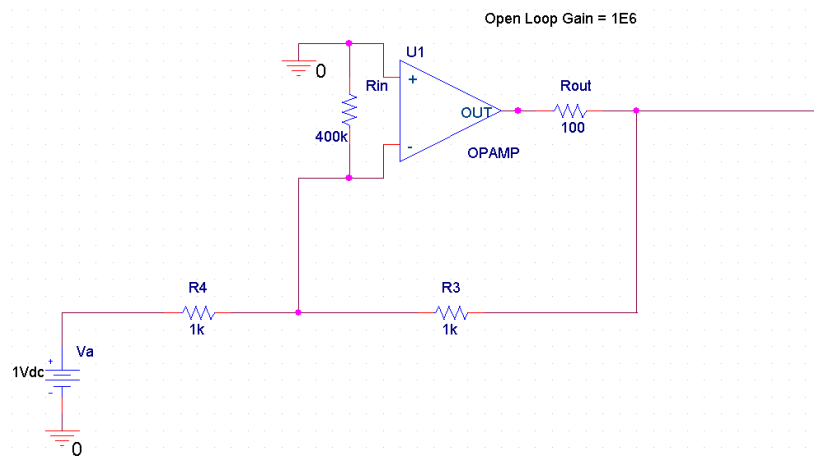*Figure 1. The Non-Ideal Operational Amplifier Model for PSpice Problem 3*

Figure 3. A circuit example where the operational amplifier is modified by the addition of the 100 ohm resistor, Rout, and 400k ohm resistor, R_{IN}

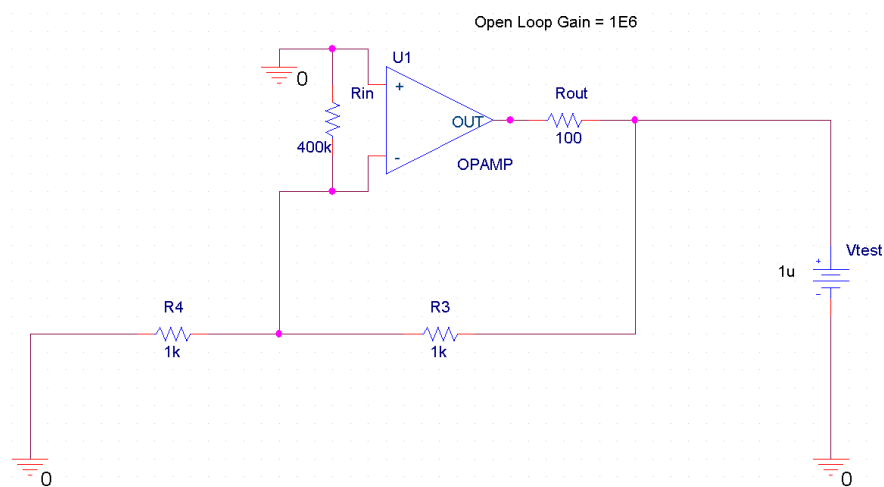- Here is an example of the measurement of Thevenin Resistance for an operational amplifier circuit.

Figure 4. An example of a system used for computing output resistance. Note that V_{TEST} is applied to the output. Its value is 1 microvolt (1u). (Recall from the PSpice tutorial that the unit for microvolt is lower case, "u") Now, we see that the Thevinin resistance is measured by replacing the independent source (V_a) by its zero element (a short) and providing V_{TEST} at the output. The current flowing is 5 mA with a 1 microvolt potential. There fore, the Thevinin resistance is $2 \times 10^{-4} \Omega$