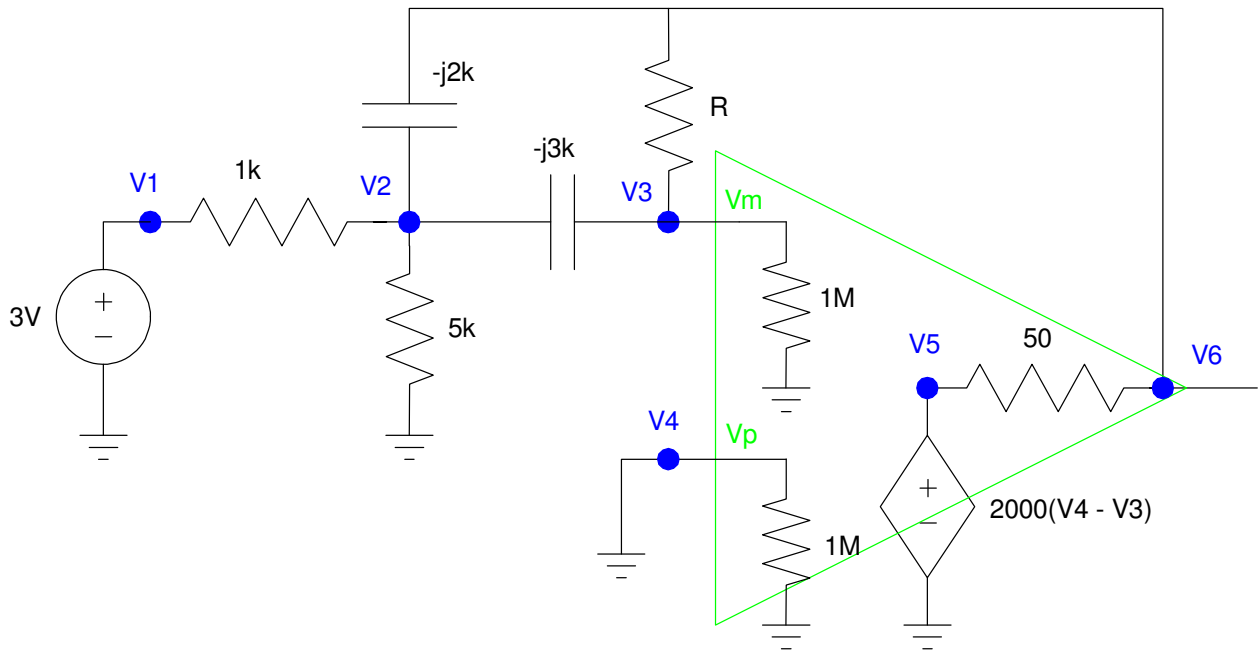


ECE 321 - Quiz #1 - Name _____

Op-Amp Amplifiers & mixers. Due midnight, April 9th
Open-Book. Open Notes. Calculators, Matlab permitted.

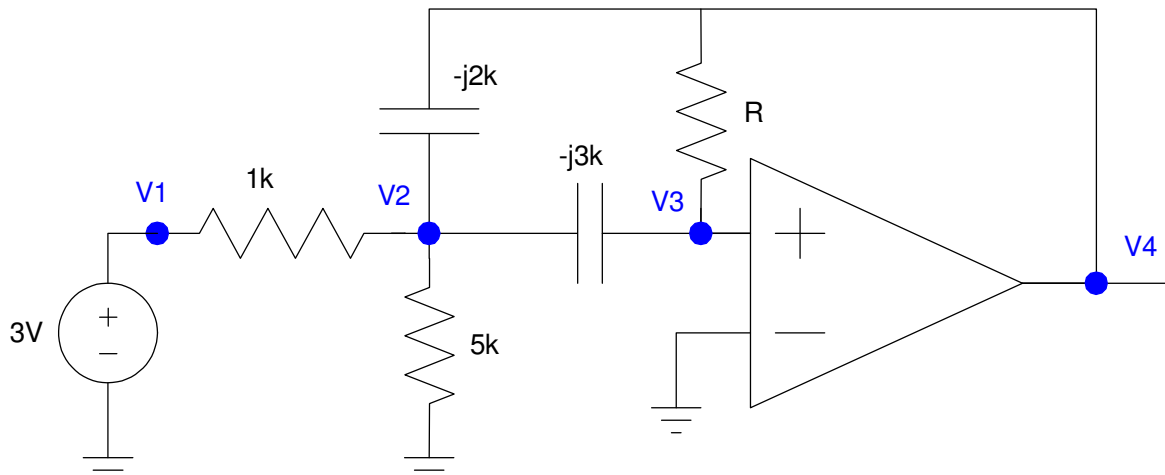
1) **Non-Ideal Op Amp:** Write the voltage node equations for V1..V5. You don't need to solve

- Assume $R = 1000 + 100 * (\text{your birth month}) + (\text{your birth day})$. For example, May 14th gives $R = 1514$.



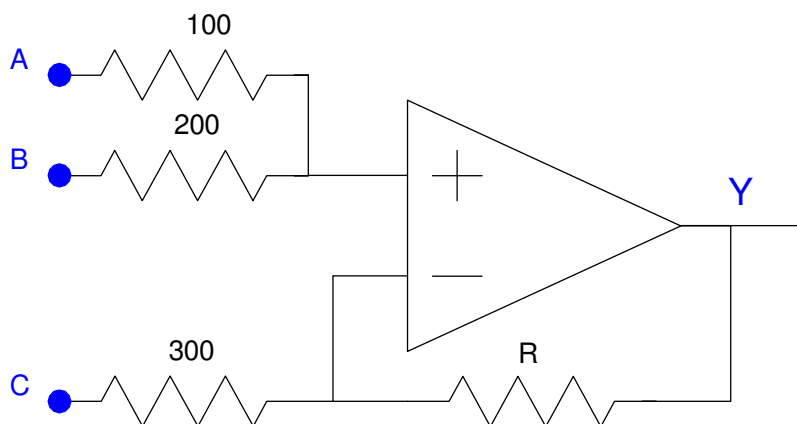
2) **Ideal Op-Amp.** Give 4 equations which allow you to solve for the four unknown voltages. You do not need to solve.

- Assume ideal op-amps.
- Assume $R = 1000 + 100 \cdot (\text{your birth month}) + (\text{your birth day})$. For example, May 14th gives $R = 1514$.



3) Determine Y as a function of A, B, and C.

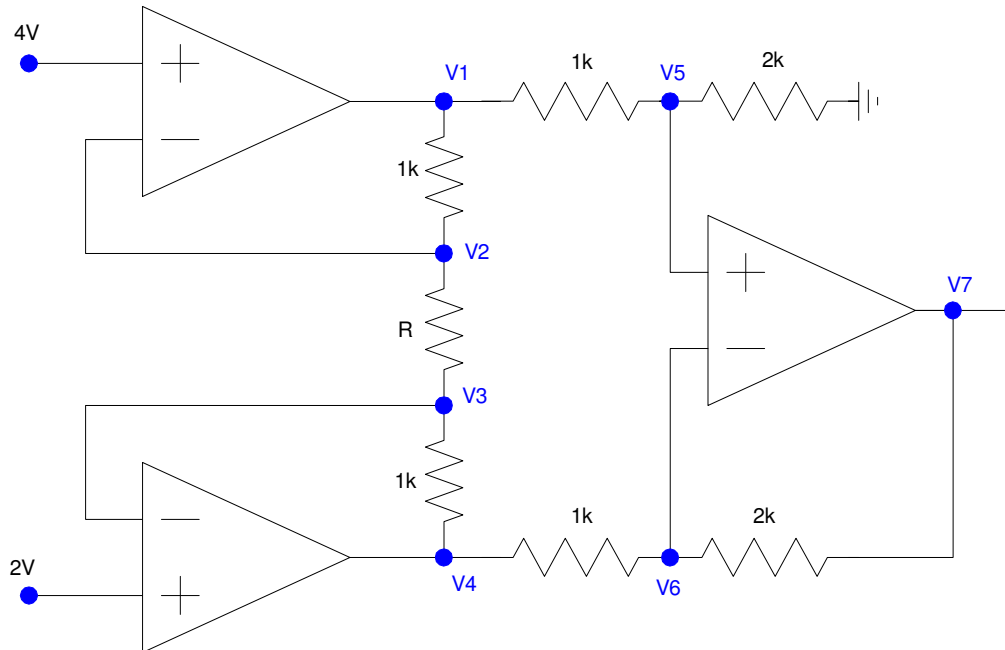
- Assume ideal op-amps
- Assume $R = 1000 + 100 \cdot (\text{your birth month}) + (\text{your birth day})$. For example, May 14th gives $R = 1514$.



4) Determine the voltages V1..V7 for the following circuit.

- Assume ideal op-amps.
- Assume $R = 1000 + 100 \cdot (\text{your birth month}) + (\text{your birth day})$. For example, May 14th gives $R = 1514$.

V1	V2	V3	V4	V5	V6	V7



5) Design a circuit to implement

$$Y = 2X - 4$$

6) Design a circuit to implement

$$Y = 2A - 3B$$