Lab 2

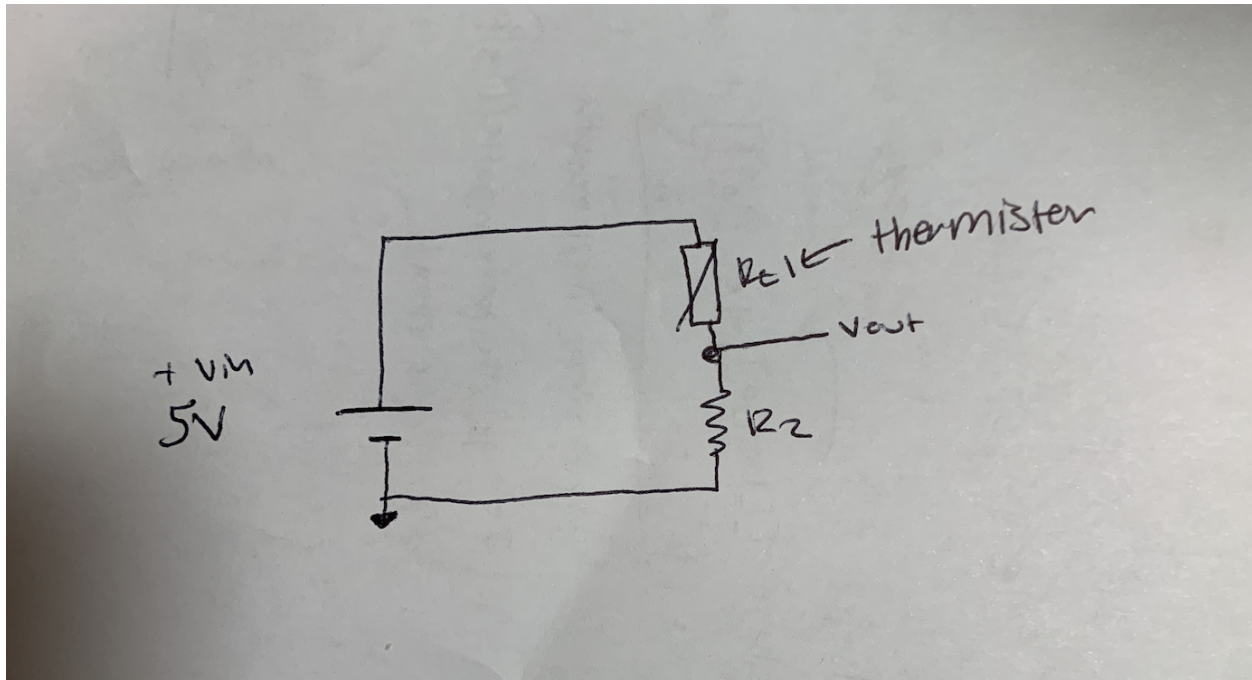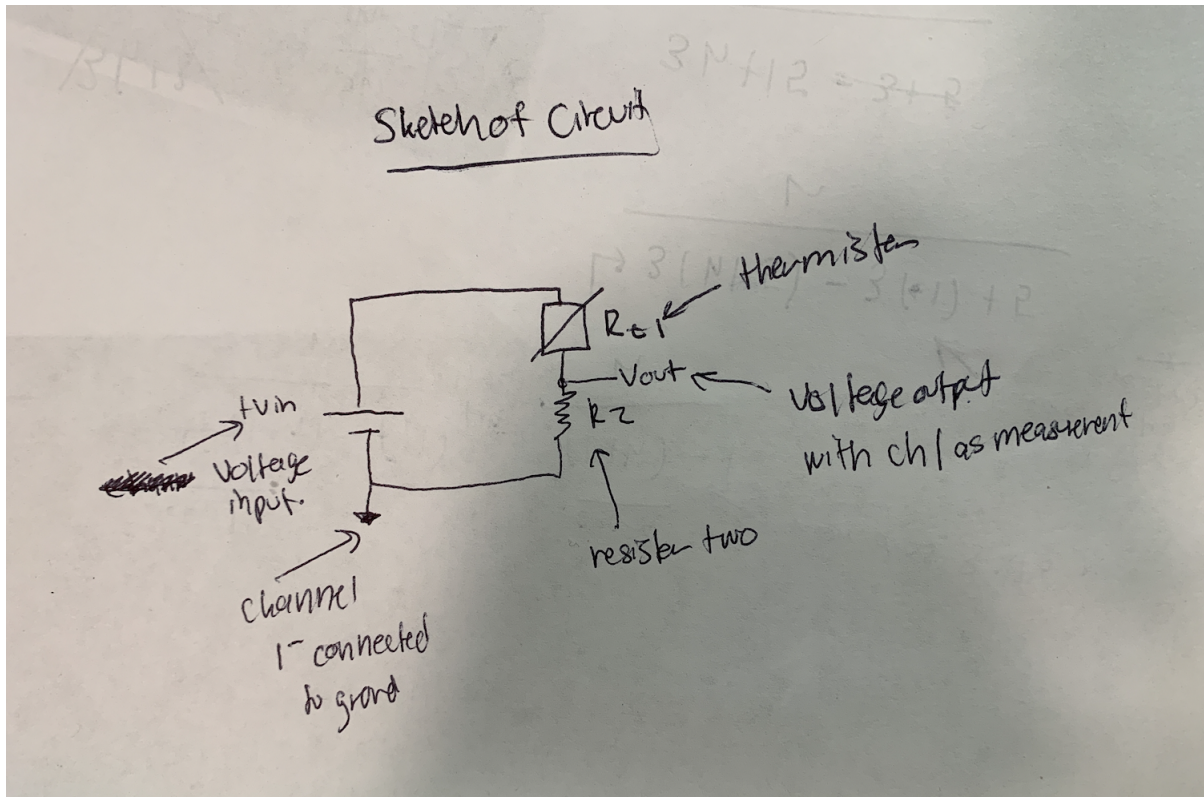## My circuit diagram

Previous sketch — not graded (more detail but voltage in as 5V not labeled)

Explanation of circuit diagram

I chose a resistor value by experimentation. My breadboard was plugged into my O-Scope and with each resistor value I plugged in, I observed the spike in Vout. I found 100 Ohm's to be a good middle ground between 10 Ohm's and 1000 Ohm's after calculating their Vout's by hand (calc listed below with 92 Ohm's (R at 100 Celsius or boiling water) as the Value of Rt 1 at).

$$5/(92 + 10) * 10 = 0.5(vOut)$$

$$5/(92 + 100) * 100 = 2.6(vOut)$$

$$5/(92 + 100) * 1000 = 4.6(vOut)$$

The value of the resistor matters because it determines how quickly my voltage out would drop as the water temperature decreased. For example, with a higher resistor value and hot water, the value of Vout would've been high, but once the cold water was

introduced, the value of Vout would've not only dropped exponentiatially because the electrons would be moving slower.