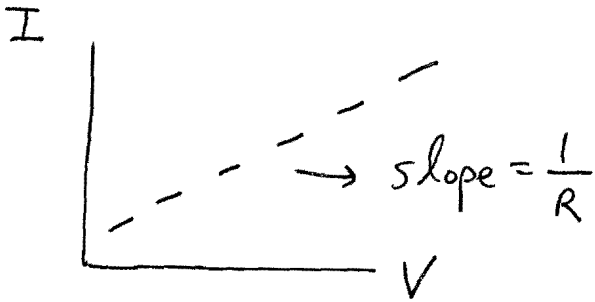


Resistor Concepts :

①

Ohm's Law :

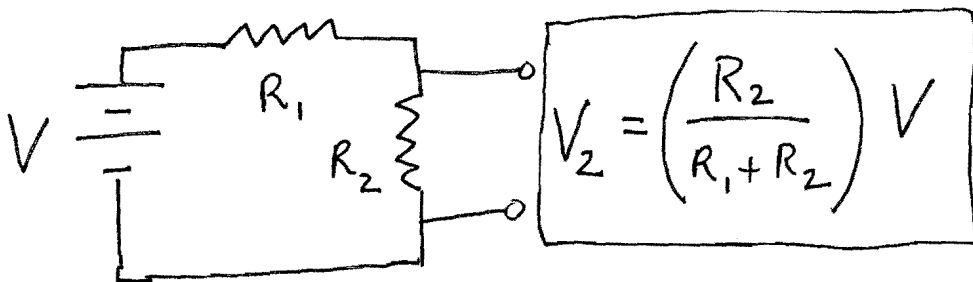
$$V = IR$$



Power :

$$P = IV = I^2 R = \frac{V^2}{R}$$

Potential Divider :



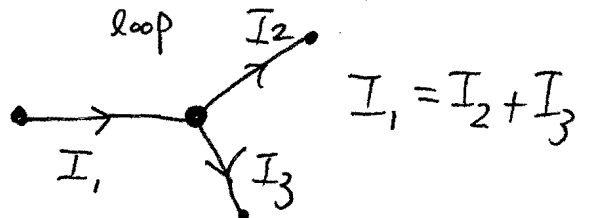
Derive this with ohm's law!

Eventually R_1 and R_2 become complex impedances, but this pattern stays the same.

Kirchoff's Laws :

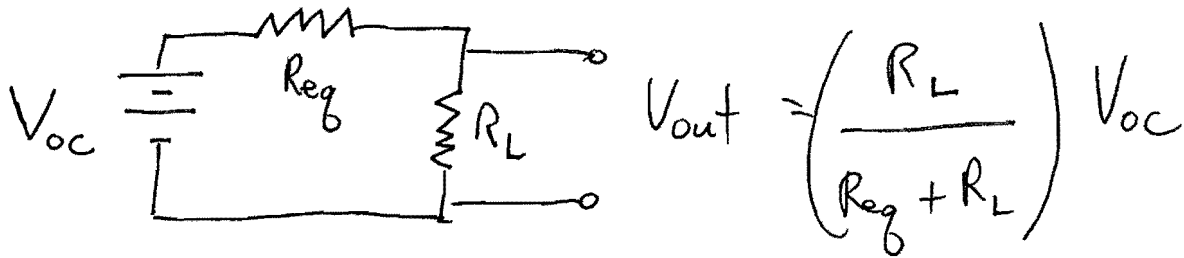
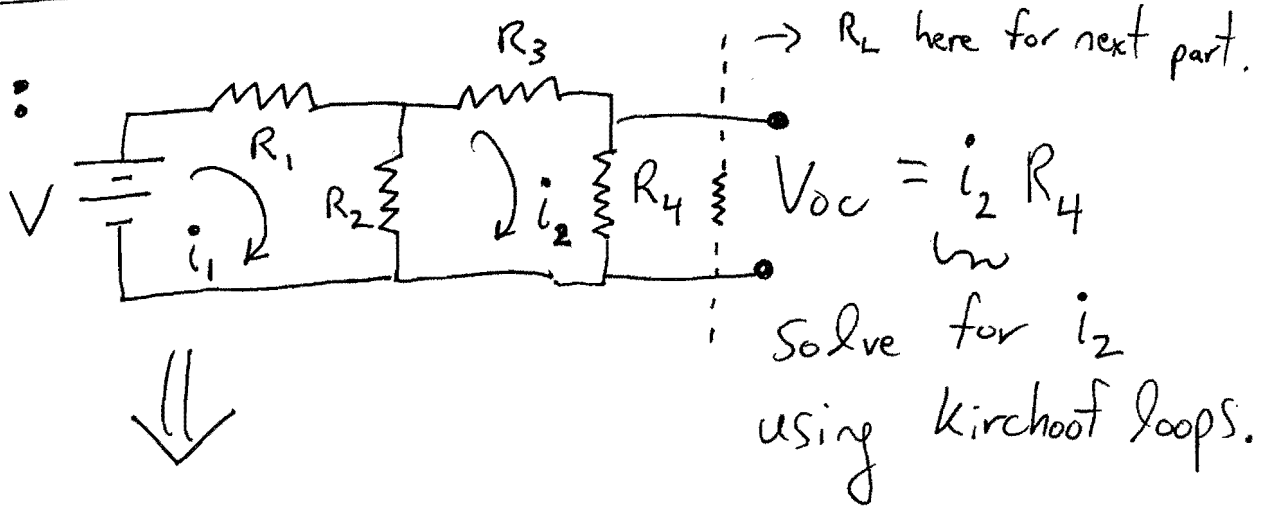
conservation of Energy $\Rightarrow \sum \Phi = 0$

conservation of charge \Rightarrow



Thevenin Equivalent Potential and R_{eq} : (2)

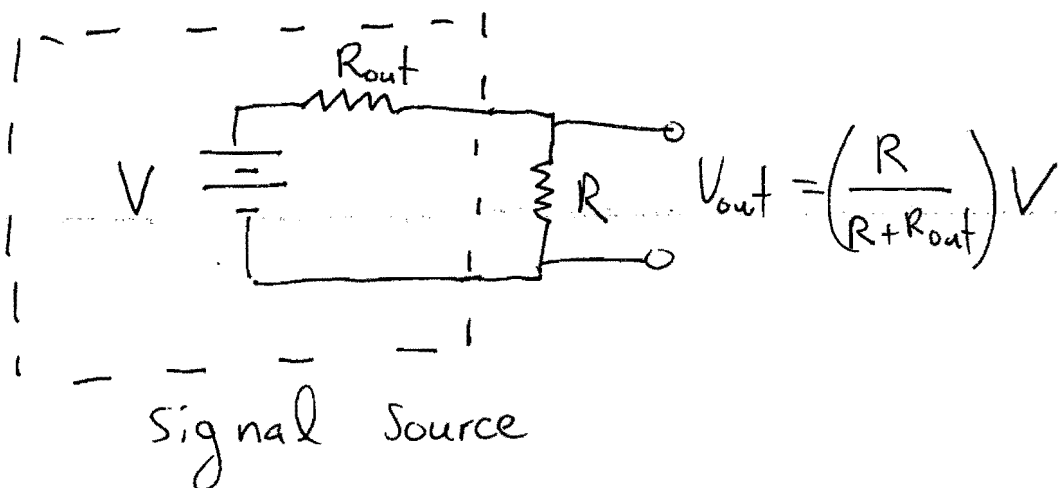
Example :



"Thevenin" circuit

Source Resistance :

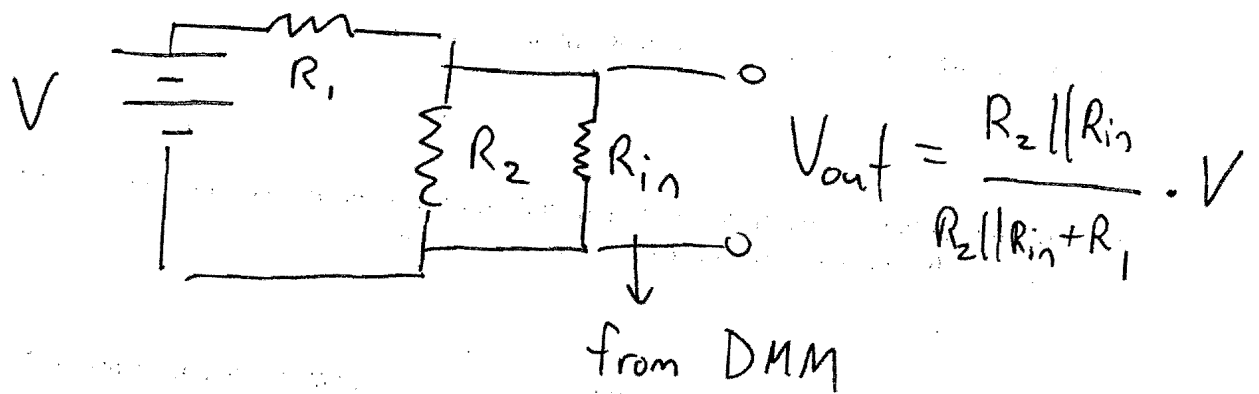
To measure source resistance place a resistor in series with the source resistor R_{out} .



Input Resistance :

3

Your DMM measures potential by placing a load resistor in parallel with the resistor you're measured voltage is from.

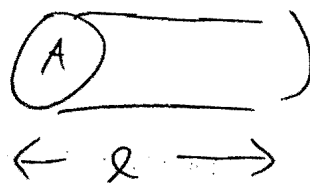


Resistivity / Conductivity :

$$R = \rho \frac{l}{A}$$

R = resistance

ρ = resistivity



$$\rho = \frac{1}{\sigma}$$

, where σ = conductivity

Think about how to do this in 2D, how about 1D?