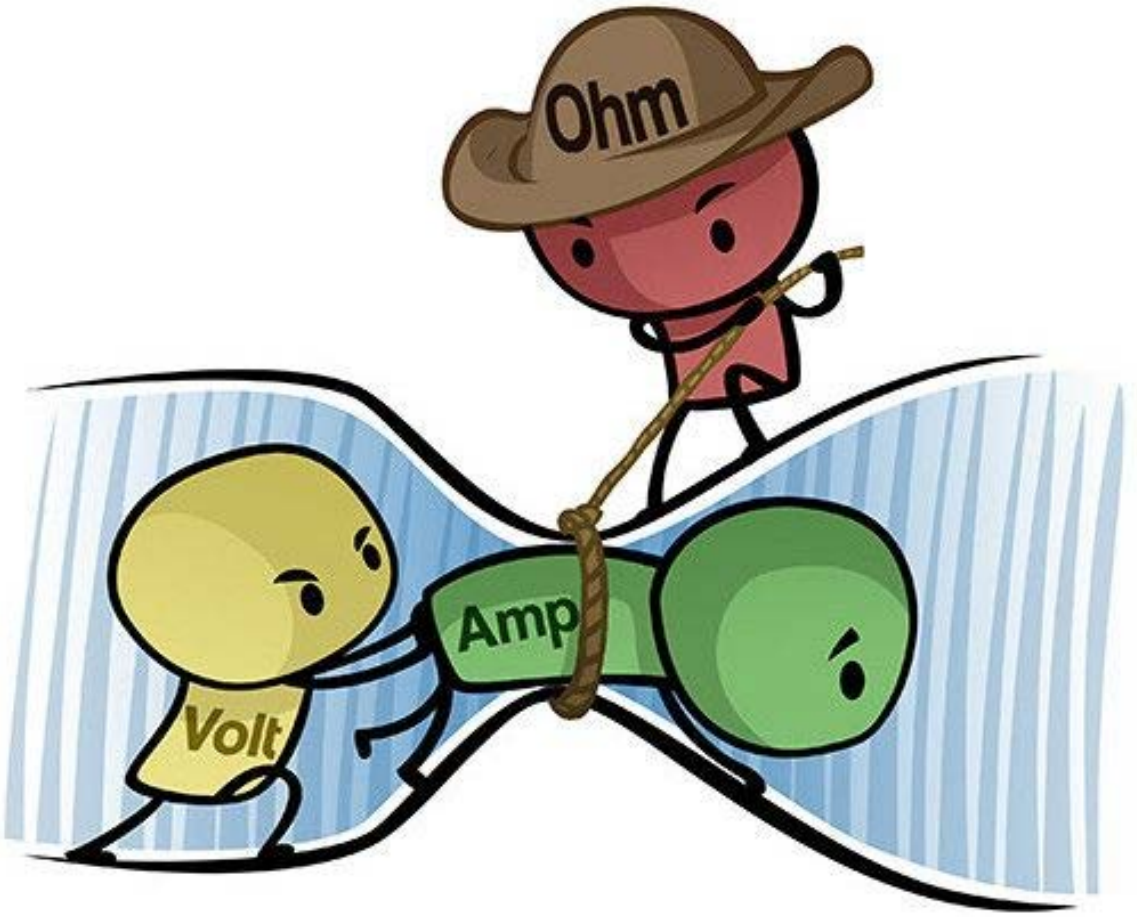
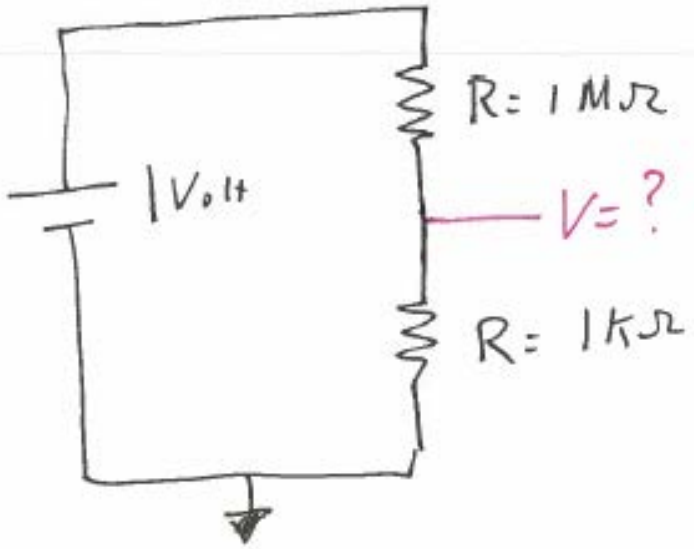
Resistors

Resistors

- Twinkle, twinkle little star, V = IR
- What is V?
- What is I?



https://i.pinimg.com/736x/b3/09/c6/b309c62a9775c6c82b3d9e5657614eae--circuit-diagram-electronic-circuit.jpg

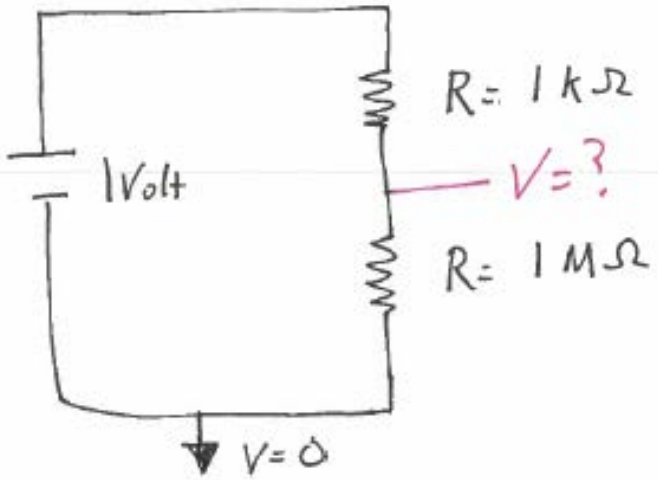


a) $V \approx 1$ Volt

b) $V \approx 0$ Volt

c) $V = \frac{1}{2}$ Volt

d) $V = \frac{1}{3}$ Volt

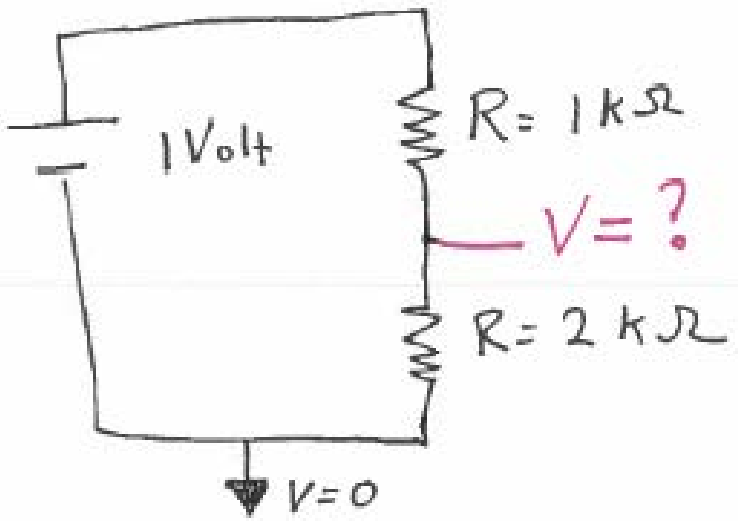


a) $V \approx 1$ Volt

b) $V \approx 0$ Volts

c) $V = \frac{1}{2}$ Volt

d) $V = \frac{1}{3}$ Volt



a) $V = 1$ Volt

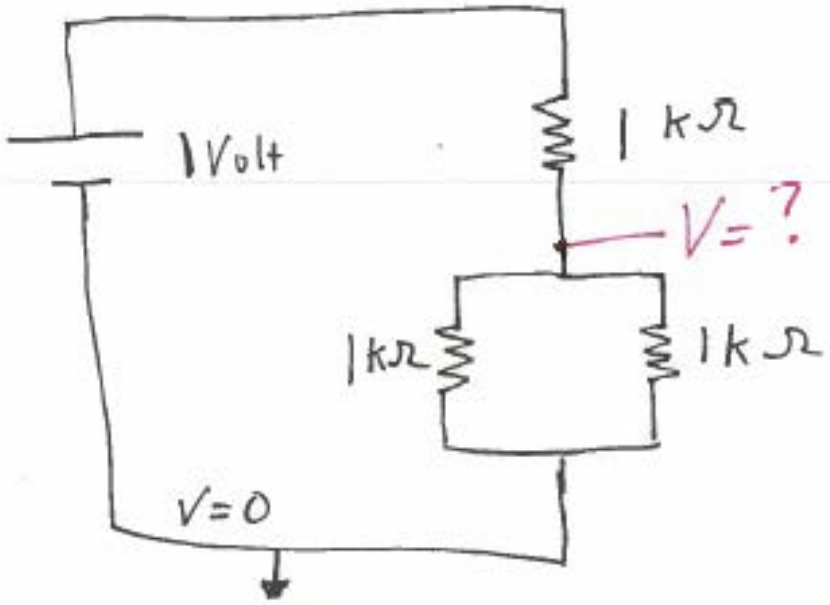
b) $V = \frac{1}{2}$ Volt

c) $V = \frac{2}{3}$ Volt

d) $V = \frac{1}{3}$ Volt

An aside about the pendulum lab

- Potentiometer

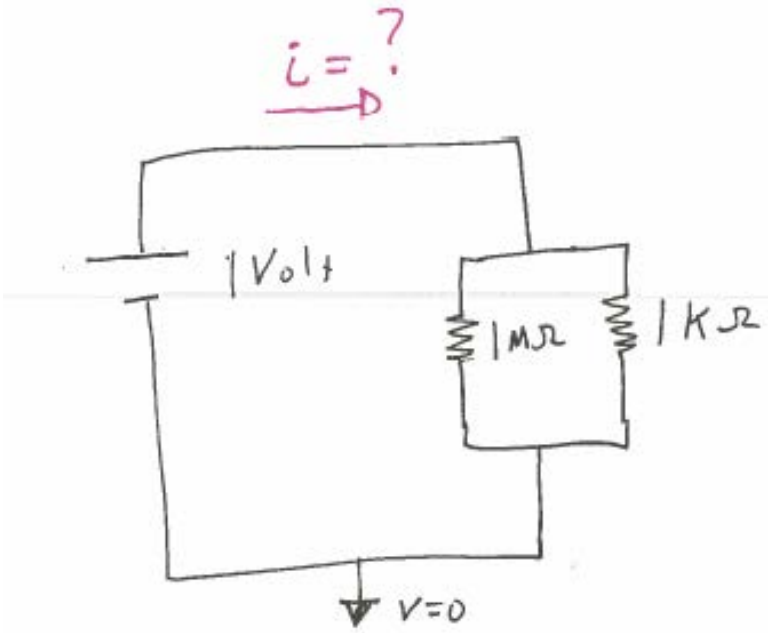


a) V = 1 Volt

b) V = 1/2 Volt

c) V = 2/3 Volt

d) V = 1/3 Volt

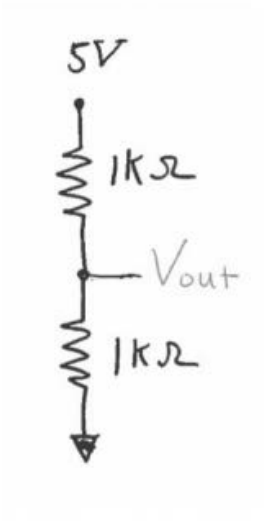


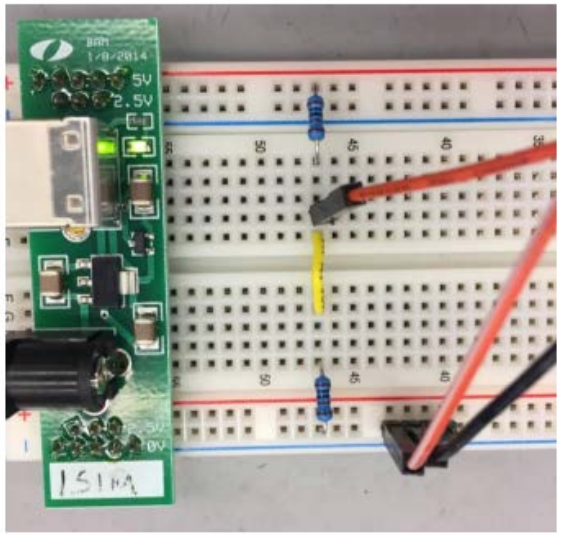
a) $i \approx \frac{1}{1000}$ Amps $\approx$ 1 mA

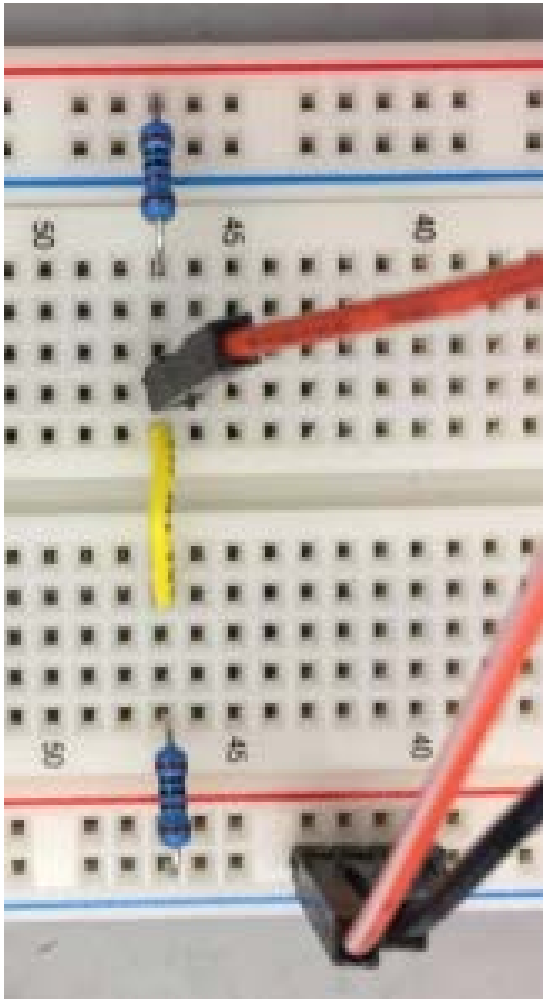
b) $i \approx \frac{1}{1{,}000{,}000}$ Amps $\approx$ 1 μA

c) $i \approx \frac{1}{10^9}$ Amps $\approx$ 1 nA

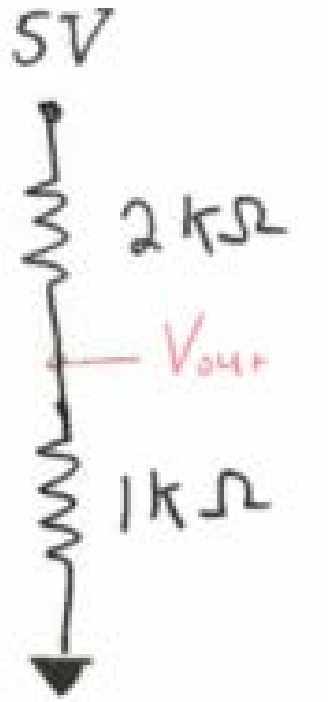
d) $i \approx$ 1 Amp

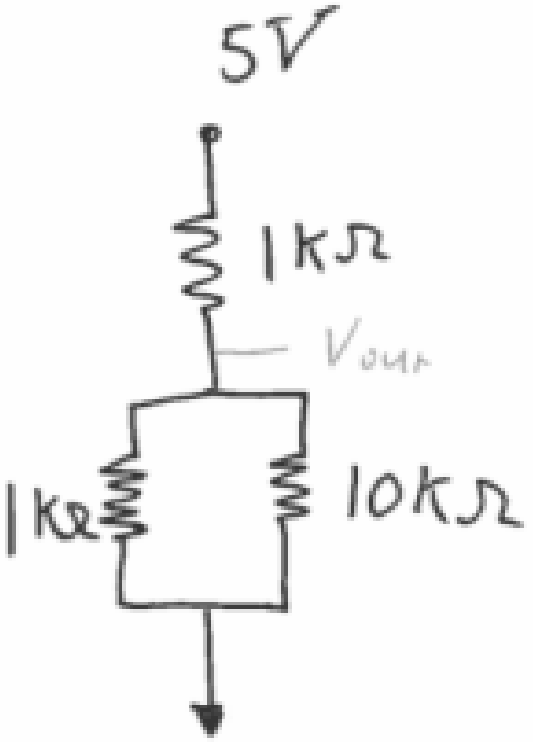

5V
1kΩ
Vout
1kΩ

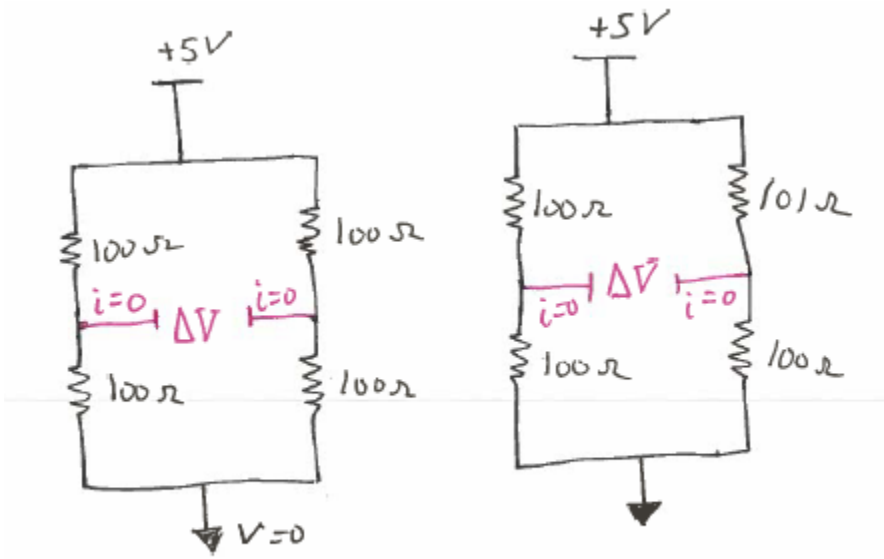

5V
2.5V
151mA



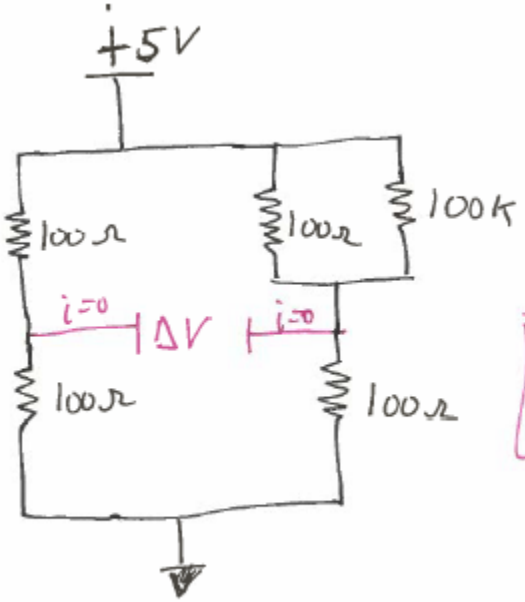
Get a head start on Lab 2…





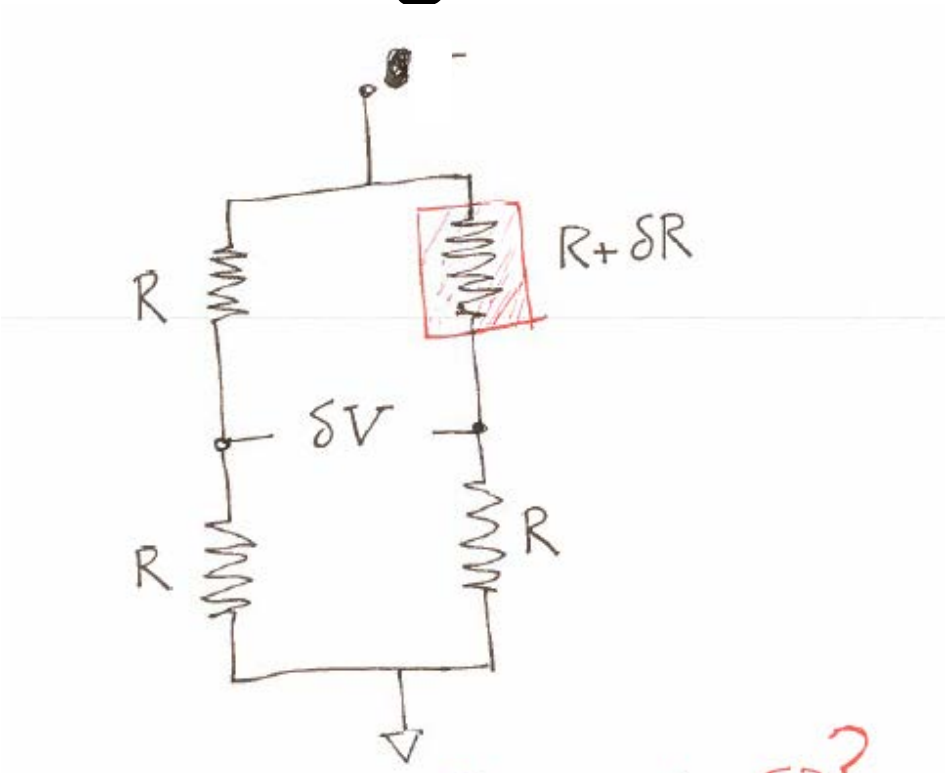

+5V
100Ω
100Ω
i=0
ΔV
i=0
100Ω
100Ω
V=0

+5V
100Ω
101Ω
ΔV
i=0
i=0
100Ω
100Ω


+5V
100Ω
100Ω
100K
i=0
ΔV
i=0
100Ω
100Ω

find ΔV

Bridge circuit



If we measure δV what is δR?

$$\frac{\delta R}{R} = \frac{\delta V}{V}\left(\quad\right)$$

find this