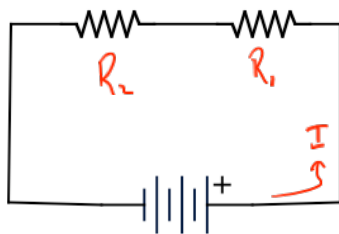


Mar 16

Get kits, and two multimeters

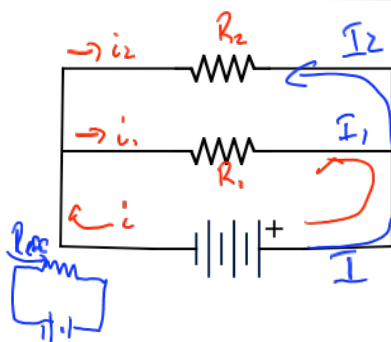
Ponderable: Parallel and Series Resistance



Series $\text{Emf} - R_1 I - R_2 I = 0$

$\text{Emf} - I(R_1 + R_2) = 0$

In series $R_{\text{eff}} = R_1 + R_2$



Parallel $i = i_1 + i_2$

$\text{Emf} - I_1 R_1 = 0$ $\text{Emf} = I_1 R_1$

$\text{Emf} - I_2 R_2 = 0$ $\text{Emf} = I_2 R_2$

$I = I_1 + I_2$

$\text{Emf} = I R_{\text{eff}}$

$\frac{I}{\text{Emf}} = \frac{1}{R_{\text{eff}}} = \frac{I_1}{\text{Emf}} + \frac{I_2}{\text{Emf}}$

$\frac{1}{R_{\text{eff}}} = \frac{1}{R_1} + \frac{1}{R_2}$

$$\text{Power} = \frac{\Delta V}{\Delta t} = \frac{I \Delta V}{\Delta t} = I \Delta V$$

$$\begin{array}{ccc} \begin{array}{c} \xrightarrow{I} \\ \text{---} \end{array} & I \Delta V & I = \frac{\Delta V}{R} \\ \begin{array}{c} \xleftrightarrow{\Delta V} \\ \text{---} \end{array} & \frac{(\Delta V)^2}{R} & \Delta V = IR \\ & I^2 R & \end{array}$$

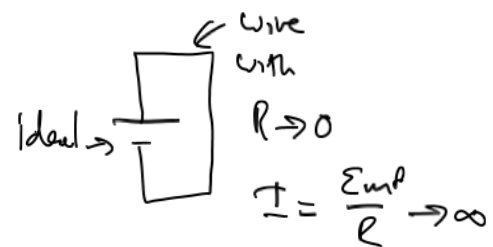
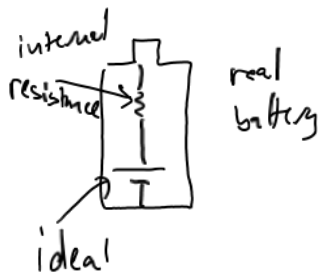
Resistance Is Fickle

Real, non-ideal battery

An Ideal battery $\Delta V_{\text{battery}} = \mathcal{E}_{\text{mf}}$

Real battery, same internal resistance

$$\Delta V_{\text{batt}} \neq \mathcal{E}_{\text{mf}}$$



$$\Delta V_{\text{battery}} = \mathcal{E}_{\text{mf}} - r_{\text{int}} I$$

QUIZ

Quiz
Week

Lab: Macroscopic View of DC and RC Circuits

Who You Calling Micro?

Manager traveled furthest for Spring
Break

S lost

R middle