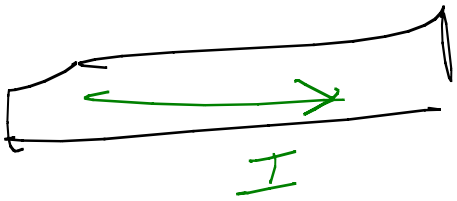
Phys 2120-4 9/26/12

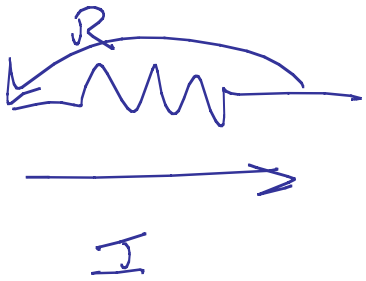
Note Title 9/26/2012

Chap 24 Electric Currents



Amps $J = \frac{I}{A}$

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



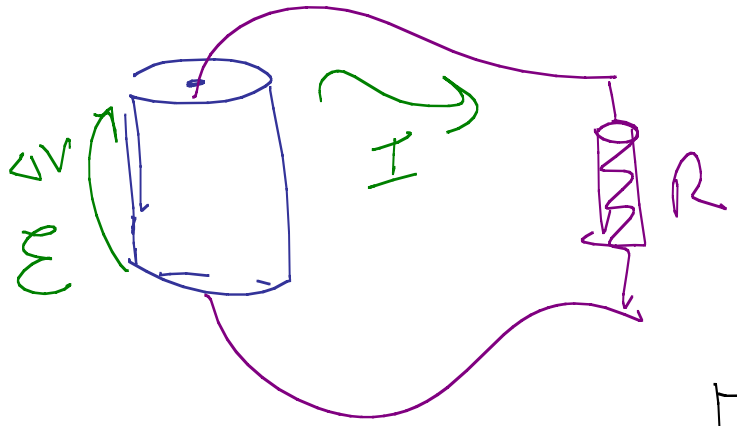
Volt Ohm Ω

$V = IR$ Ohm's Law

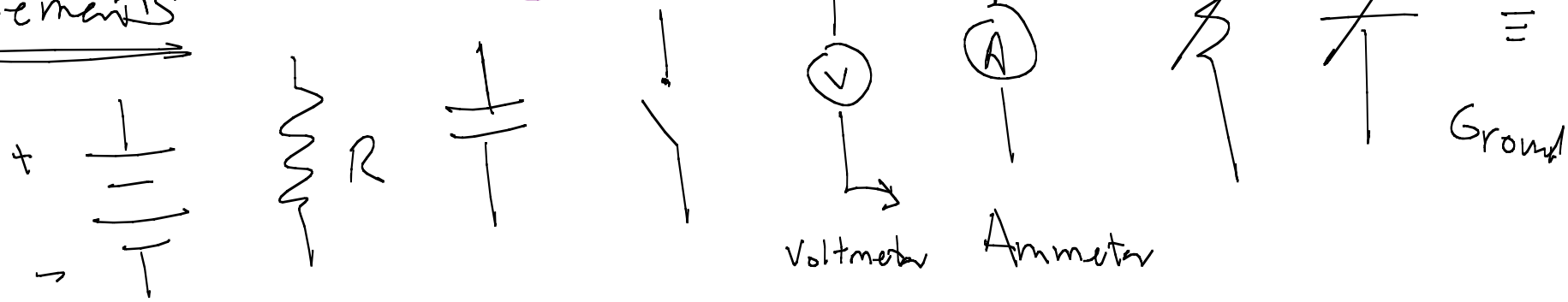
$P = VI = I^2R = \frac{V^2}{R}$

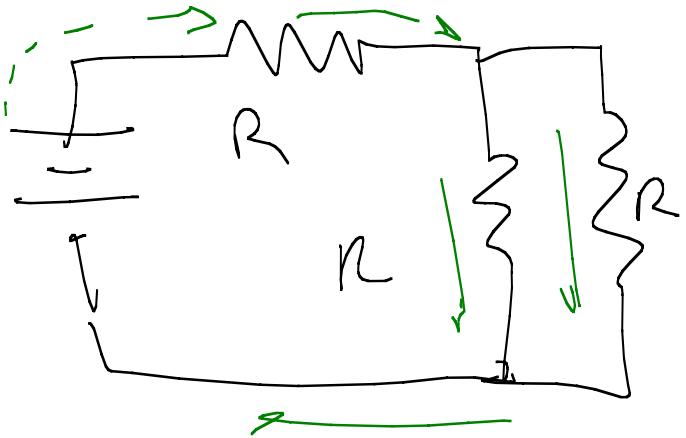
W

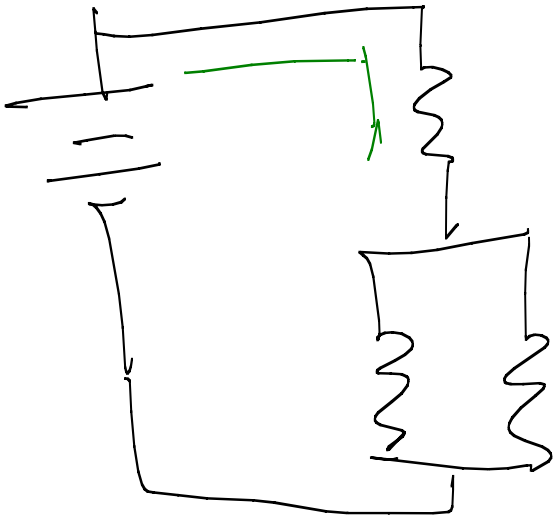
Chp. 25 Electric Circuits



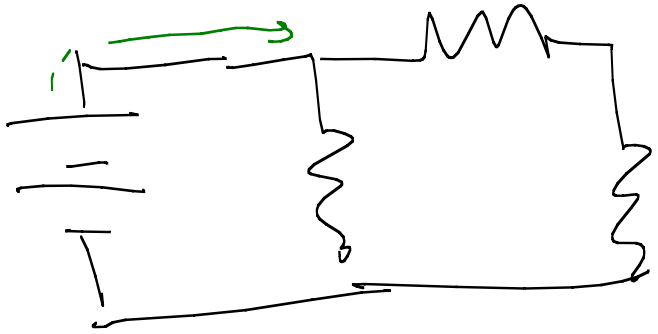
Elements







Same



Not the same

The lengths of wire are not important

Series Resistors

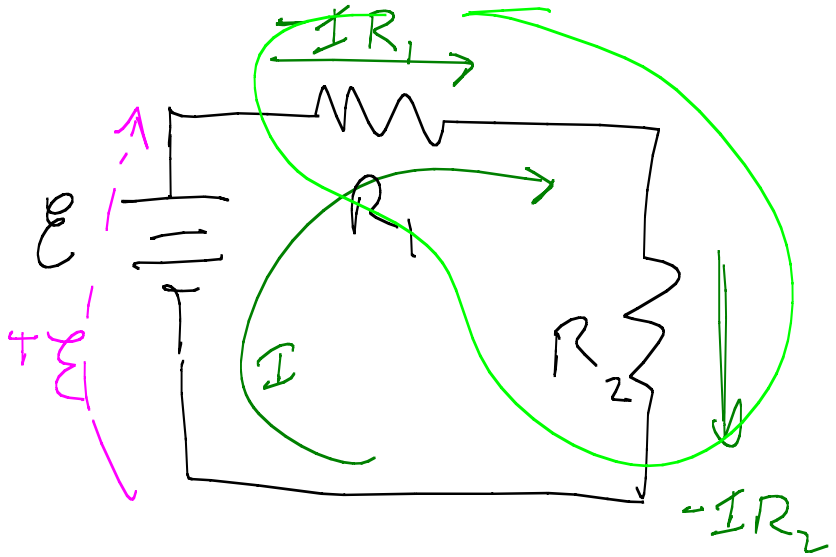
Walk around circuit.

List all changes in potential

$\Rightarrow \Delta V = 0$

$\mathcal{E} - IR_1 - IR_2 = 0$

$\mathcal{E} = I(R_1 + R_2)$

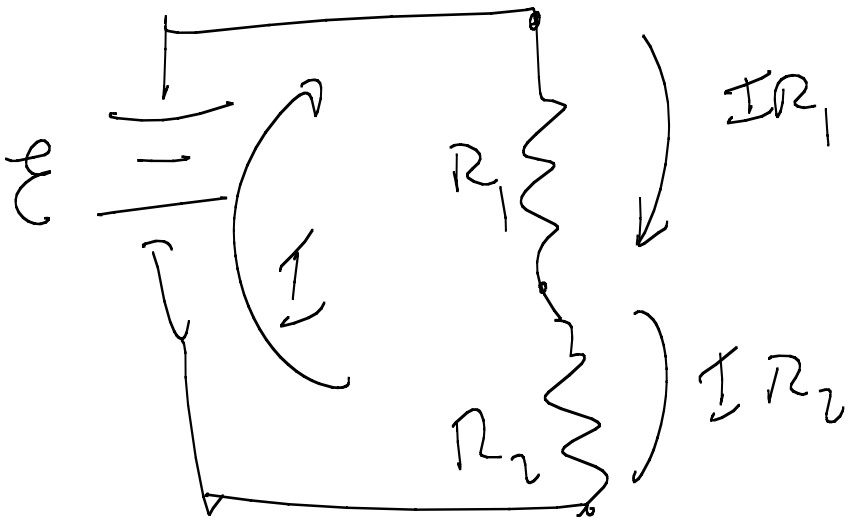


$R_{eq} = R_1 + R_2 + R_3 + \cdots$

$\mathcal{E} = IR$

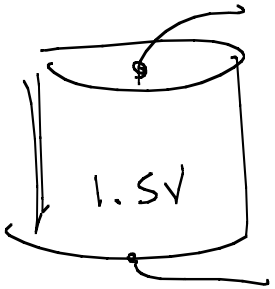
$R_{eq} = R_1 + R_2$

Series Resistors



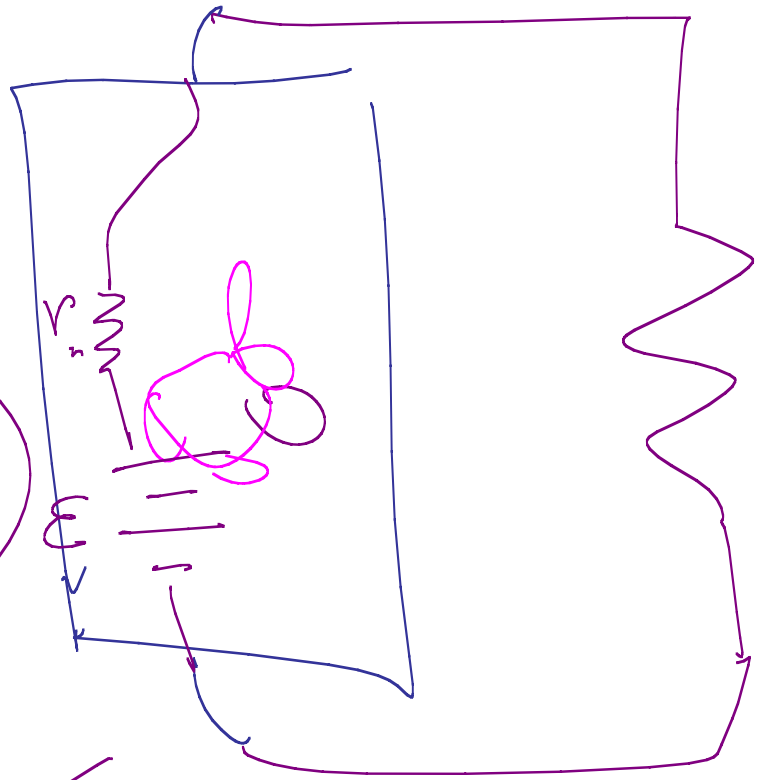
Voltage divider

Internal Resistance of Battery



Real battery

$$V_{term} = \mathcal{E} - I r_{int}$$



$$\mathcal{E} = (r + R) I$$