18 WS 152

120 Ω & 86 Ω in parallel

$R_1 = 120\ \Omega$

$R_2 = 86\ \Omega$

Parallel

Want R_{eq}

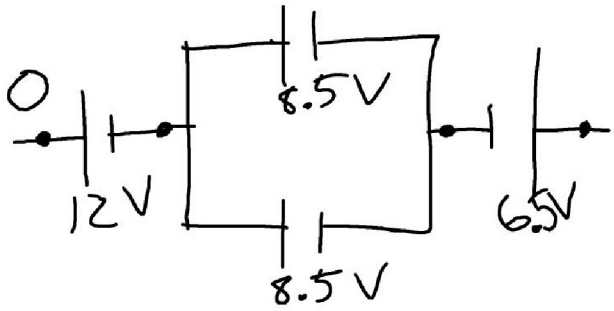
$$\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$\frac{1}{R_{eq}} = \frac{1}{120} + \frac{1}{86}$$

$$\frac{1}{R_{eq}} = \frac{86}{10320} + \frac{120}{10320}$$

$$\frac{1}{R_{eq}} = \frac{206}{10{,}320}$$

$$R_{eq} = \frac{10{,}320}{206} = 50\ \Omega$$



$$-12V - 8.5V + 6.5V = -14\ V$$

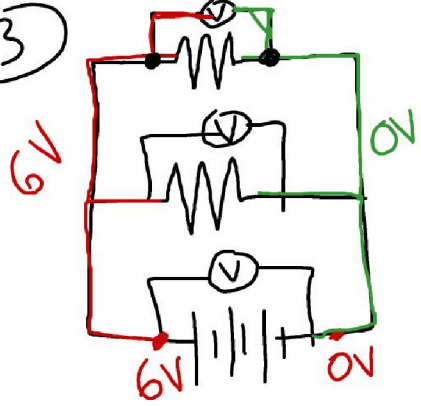
(8) NO, Ammeters have a low resistance, in parallel, they steal the current. (Current determines bulb brightness)

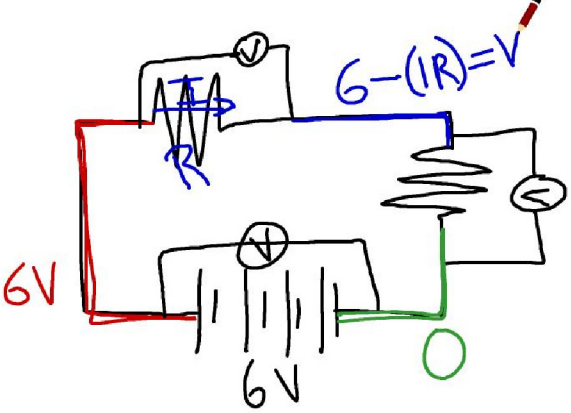
(11) O Amps. Voltmeters have high resistance, so the current is blocked!

(12)

$I_1 + I_2 = I_3$ or $I_1 = I_2 = \frac{1}{2} I_3$

13





Voltmeter

~~V=IR~~

~~V=(0)(∞)~~

Notes

Resistance in wires

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

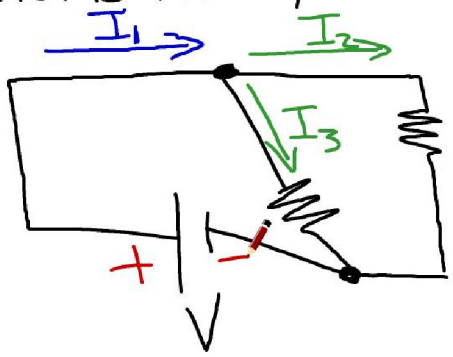
ρ = Resistivity

L = length

A = cross sectional area

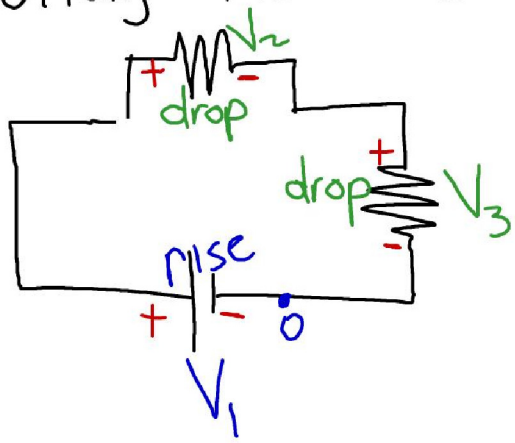
Kirchoff's Rules

① Junction Rule; current in = current out



$$I_1 = I_2 + I_3$$

Loop Rule : In a closed loop, sum of voltage rises = sum of voltage drops.



$$|V_1| = |V_2 + V_3|$$