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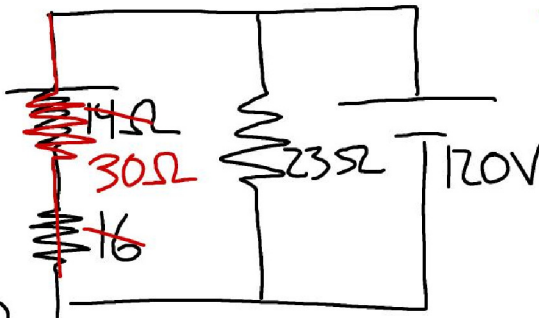
$R_1 = 14\Omega$
 $R_2 = 16\Omega$
 series

$V = 120V$

$R_3 = 23\Omega$

In parallel w/
 $R_1 \& R_2$

want: I



$V = IR$
 ~~$V = IR$~~

$V = IR$ (Whole circuit)

$V = IR_{eq}$

$\frac{1}{R_{eq}} = \frac{1}{30} + \frac{1}{23} = \frac{23}{690} + \frac{30}{690}$

$\frac{1}{R_{eq}} = \frac{53}{690}$

$R_{eq} = \frac{690}{53}$

$120 = I \left(\frac{690}{53} \right)$

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$l_1 = l_2$

$R_1 = R_2$

$\rho_{Al} = 2.82 \times 10^{-8} \Omega \cdot m$

$\rho_{Cu} = 1.72 \times 10^{-8} \Omega \cdot m$

Want $\frac{A_{Al}}{A_{Cu}}$

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

$\frac{\rho_{Al} l}{A_{Al}} = \frac{\rho_{Cu} l}{A_{Cu}}$

$\frac{2.82 \times 10^{-8}}{1.72 \times 10^{-8} \frac{A_{Al}}{A_{Cu}}} = \frac{A_{Al}}{A_{Cu}}$

$\frac{2.82}{1.72} = \frac{A_{Al}}{A_{Cu}}$

(11)

$$I = 1200 \text{ A}$$

$$V = 1.6 \times 10^2 \text{ V}$$

$$\rho_{\text{Cu}} = 1.72 \times 10^{-8} \Omega \cdot \text{m}$$

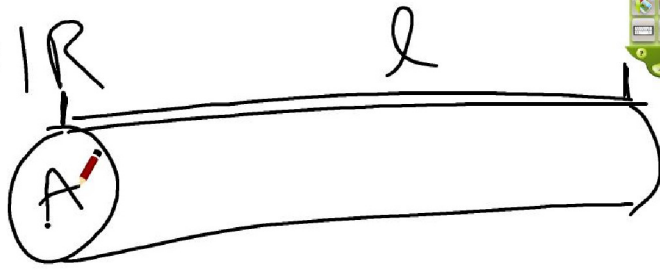
$$l = 0.24 \text{ m}$$

want: ~~A~~ radius

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

$$A_0 = \pi r^2$$

$$V = IR$$



LESSON

BACKGROUNDS

Q3)

$$\rho_1 \neq \rho_2$$
$$l_1 = l_2$$

Yes

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

LESSON

BACKGROUNDS

$$\textcircled{Q4} R = \frac{\rho l}{A} = \frac{\rho l}{(\pi r^2)} \rightarrow \frac{\rho(2l)}{\pi(2r)^2}$$

$$\rightarrow \frac{2\rho l}{4\pi r^2} = \frac{1}{2} \frac{\rho l}{\pi r^2}$$

$\textcircled{Q7}$

$$V=120$$

$$I = \frac{V}{R}$$

$$P=IV$$

$\textcircled{10}$ $V=I(R+R)$ series

$$I = \frac{V}{2R} \text{ through each} \rightarrow I = \frac{1}{4} \frac{V}{R}$$

$$V = I\left(\frac{R}{2}\right) \xrightarrow{\text{Parallel}} I = \frac{2V}{R} \xrightarrow{\frac{1}{2}I \text{ to each}} \textcircled{I = \frac{V}{R}}$$

$$\frac{1}{R_e} = \frac{1}{R} + \frac{1}{R}$$

$$R_{eq} = \frac{R}{2}$$

(=)

