

## 17.4 Electric power.

$$\bar{P} = \frac{W}{t} = \frac{qV}{t} \quad P = IV$$

for ohmic materials

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

\* When you get your electricity bill they charge you for  $\text{KW} \cdot \text{HRs}$ .

$$\frac{\text{power} \cdot \text{time}}{\text{time}} = \text{energy}$$

they are ENERGY co, not power co.

Where does power go?

↳ electrons aren't destroyed but its changed to heat in resistive materials

\* in homes we have 110 or 120V so the 'V' stays constant and the "I" changes  
 $P = IV$

From the lecture

$R_s = R_1 + R_2 + R_3 + \dots$  the one resistor is bigger than the biggest

$$R_p = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots$$

the one resistor must be smaller than the smallest