

## Circuit Pointers

- 1) watch placement of  $\textcircled{V}$  &  $\textcircled{A}$  !



2)



watch which voltage  
or current is being  
asked for!

$V_1$  or  $V_T$     $I_2$  or  $I_T$   
etc

- 3) I can be measured in mA but  
to use equations must be in A!

$$24 \text{ mA} \times \frac{1 \text{ A}}{1000 \text{ mA}} = 0.024 \text{ A}$$

\* learn your metric conversions \*

- 4) Power is not Resistance

$$P = IV$$

$$W = AV$$

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

$$\Omega = \frac{V}{A}$$

# Ohm's Law Pointers

- 1) • graph  $V$  vs  $I$  for any resistor
- title =  $V$  vs  $I$  for ...
  - $\emptyset V = \emptyset I \therefore (0,0)$  is always a data pt!
  - can graph using mA but when calculating you must be in A.

$$1.3 \text{ mA} \times \frac{1 \text{ A}}{1000 \text{ mA}} = 0.0013 \text{ A}$$

- 2) • slope of a  $V$  vs  $I$  graph NOT just
- NOT slope of  $I$  vs  $V$
  - NOT  $\frac{\Delta I}{\Delta V}$
- $R = \frac{V}{I}$  ←

$$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{\Delta V}{\Delta I} = \frac{V_2 - V_1}{I_2 - I_1} = \frac{V}{A} = \Omega$$

\* units everywhere

- Ohm's Law  $V = IR$
- as voltage  $\uparrow$   
current  $\uparrow$  in  
a direct  
proportion