- 1. Voltmeter & K Used to measure current.
- 2. Multimeter
- B. Used to measure voltage.
- 3. Probes (

Period:

- The parts of the meter that touches the metal of the circuit device.
- 4. Ammeter A
- D. A device that can measure voltage, current, or resistance.
- 5. Ohmmeter F
- E. Used to measure a resistor.

How do you hook up an ohmmeter?

How do you hook up a voltmeter?

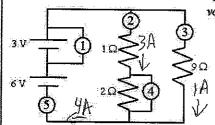
How do you hook up a ammeter?

Ohmmeter, Voltmeter, or Ammeter

- A Must be in series.
- The circuit has to be off.
- V+O Must be in parallel with the device being measured.
- \_\_\_\_\_ Used to tell the amount of current in the circuit.
- V+P The circuit must be on.
- A Delicate. Can be damaged if hooked up wrong.
- V Can measure if a battery is worn out.
- V Can measure a resistor only in a circuit (its 10 1 35)
- O Can measure a resistor out of the circuit.

What is the resistance for a good wire? O

What is the resistance for a broken wire? infinite or "error"

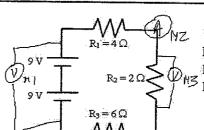


Identify the meters as voltmeters or ammeters.

Figure out what each meter reads.

Figure out what each meter reads.  

$$M = 3V$$
 $I = 4V$ 
 $I = 4V$ 
 $I = 4V$ 
 $I = 1A = M3$ 
 $I = 4V$ 
 $I = 4V$ 



Draw meters that will measure the following:

M1: Total voltage

M1: Total voltage
M2: Total current where)
M3: Voltage over R2

Figure out what each meter reads.

$$M = |8V$$

$$I = \frac{1}{2} = \frac{18}{12} = 1.5A$$

$$V = I_{2} = 1.5(2) = 3V$$

In Lab:

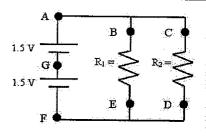
Measure the three resistors you are given:

$$R_1 =$$
 ;  $R_2 =$  ;  $R_3 =$ 

Put the above resistors in series.  $R_T =$ How does RT compare with the individual resistors?

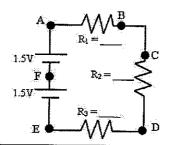
Put the above resistors in parallel.  $R_T =$ How does R<sub>T</sub> compare with the individual resistors?  $R_1 = \underline{\phantom{a}}$  $R_2 = \underline{\hspace{1cm}}$  $V_{FA} =$  $\mathbf{V}_{\mathtt{BE}} = \underline{\phantom{a}}$ 





Build the following circuit:

 $V_{DE} =$ 



WITH THE MULTIMETER OFF: set up your circuit to read the current in the first branch (at B or E). Have the teacher check your setup before you turn it on.

I<sub>1</sub> = \_\_\_\_\_

Using V<sub>T</sub> and I<sub>T</sub>, calculate R<sub>T</sub>.

 $I_2 = \underline{\hspace{1cm}}$ 

 $I_T =$ 

Check it with your ohmmeter.