Prelab_PHYS222
Series & Parallel Resistances

1. What is a series circuit?

2. What a parallel circuit?

3. Is the equivalent resistance of a parallel circuit greater or less than any of the individual resistances? Explain.

4. Calculate the equivalent resistance of a circuit that is composed of one 10 ohm resistor, one 20 ohm resistor and one 30 ohm resistor **connecting in parallel**.
First show your calculation with the equivalent resistance equation.

Then use the PhET simulation of DC circuit kits to verify.
https://phet.colorado.edu/en/simulation/circuit-construction-kit-dc-virtual-lab
1. Build a circuit that has a 9V battery and those three resistors (10 ohm, 20 ohm and 30 ohm in **parallel**). You can click the resistor in the simulation to change the value of resistance, don't forget to click "Values" to display the values of devices.
2. Connect an ammeter in series with the 9V battery, see what's the reading of the current.
3. Use that current and the voltage of the battery to calculate the equivalent resistance.

5. An ideal ammeter has _____ resistance and _____ affect the circuit being measured. All real ammeters have _____resistance *(which is a function of the DMM setting)* and consequently _____ affect the circuit being measured.
(Fill in the blanks with nonzero/zero and does/does not)