Electric Circuits Lab 2

1 Series and Parallel Resistor Combinations

1.1 Resistors in series

Using a multimeter, measure the resistances of the three resistors that you have.

Measured resistance of R_1	
Measured resistance of R_2	
Measured resistance of R_3	

Calculate the equivalent resistance for the following series combinations. After you calculate the values, then connect the resistors in series and measure the equivalent resistance directly. You do not need to make a circuit to measure the resistances (you do not need a voltage supply).

	Calculated	Measured
R_1 in series with R_2		
R_1 in series with R_3		
R_2 in series with R_3		
R_1 in series with R_2 in series with R_3		

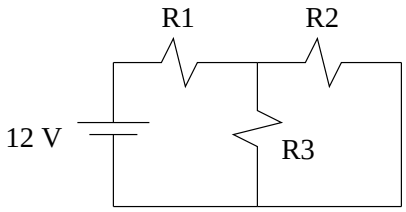
1.2 Resistors in parallel

Calculate the equivalent resistance for the following parallel combinations. The notation $R_1 \parallel R_2$ means "R_1 in parallel with R_2". After you calculate the values, then connect the resistors in parallel and measure the equivalent resistance directly.

	Calculated	Measured
$R_1 \parallel R_2$		
$R_1 \parallel R_3$		
$R_2 \parallel R_3$		
$R_1 \parallel R_2 \parallel R_3$		

2 Three-Resistor Circuits

Analyze the circuit below and calculate the values requested in the table.



Calculated values

	Voltage across	with high potential on which side? (left, right, top, bottom)	Current through	with current flowing toward what direction? (left, right, up,down)
R_1				
R_2				
R_3				

Now, connect the circuit to the voltage supply and measure the corresponding quantities.

> IMPORTANT: When the multimeter is set to measure current, it is very easy to blow the fuse if you do not connect the multimeter to the circuit in the proper way. If you are not absolutely sure that you have the meter connected properly, please turn the meter off and keep the meter off until your instructor can check your setup.

Measured values

	Voltage across	with high potential on which side? (left, right, top, bottom)	Current through	with current flowing toward what direction? (left, right, up,down)
R_1				
R_2				
R_3				