# WORKSHEET SERIES P2

Student Name	date	MB#
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Students should be able to Calculate, Measure and Compare fundamental characteristics of a series circuit.

- <u>Measure:</u> The student will use a Digital Multimeter (DMM), to measure the current (I), voltage (E), and resistance (R) for the Circuit on the P2 circuit on the Miniboard Series Trainer (simulator).
- <u>Calculate:</u> The student will use the principles of ohms law to calculate, current (I), voltage (E), and resistance (R) for the Circuit using the measurements taken with the DMM on the Miniboard Series Trainer (simulator).
- <u>Compare:</u> The student will then compare the results of the measurements taken and those calculated using the DMM measurements to calculate.

# Part A Measure

#### **Measuring Voltages:**

Measure and record Battery Voltage	a
Measure and record Voltage Drop for resistor R1	b
Measure and record Voltage Drop for resistor R2	c
Measure and record Voltage Drop for resistor R3	d
Measure and record Total Voltage Drop for series circuit P2	e
Measuring Resistance:	
Measure and Record resistance of resistor R1	f
Measure and Record resistance of resistor R2	g
Measure and Record resistance or resistor R3	h
Measure and Record total resistance (Rt) or circuit P2	i
Measuring Amperage	
Measure and Record the amperage of circuit P2	j

# Part B Calculate

Calculate Voltage(RXI)Calculate Voltage Drop by multiplying resistance x amperage for each resistor.							
R1 voltage drop	(f x j)		k				
R2 voltage drop	(g x j)		1				
R3 voltage drop	(h x j)		m				
Circuit P2 Total voltage drop	(k + l + m)	Sum	n				
Circuit P2 Total voltage drop Calculated	(i x j)		0				
Calculate Resistance (E/I)							
Calculate Resistance by dividing voltage by amperage.							
R1 Resistance	(b / j)		p				
R2 Resistance	(c / j)		q				
R3 Resistance	(d / j)		r				
Circuit P2 (Rt) Resistance Total	(I + j + k)	Sum	S				
Circuit P1 Calculated Resistance Total	(e x j)		t				
Calculate Amperage (E/R)							
Circuit P2 (It) Amperage Total	(e / i)		u				

### Part C Compare

Record measured and calculated results to complete the following table. Note: letters in each cell refer to your answers above. (Measured and calculated readings should be less than + - 5%)

Voltages	Measured	Calculate	Calculated	
R1 voltage drop	b	k	k	
R2 voltage drop	с	1	1	
R3 voltage drop	d	m	Volt drop sum	
P2 total voltage drop	e	0	n	
Resistance	Measured	Calculate	Calculated	
R1 resistance	f	p	р	
R2 resistance	g	q		
R3 resistance	h	r	Resistance Sum	
P2 resistance total (Rt)	i	t	S	
Amperage	Measured	Calculate	Calculated	
P2 circuit amperage	j	u	u	