WORKSHEET
SERIES P5

Student Name_____date_____MB#_____

Students should be able to Calculate, Measure and Compare fundamental characteristics of a series circuit.

- **Measure:** The student will use a Digital Multimeter (DMM), to measure the current (I), voltage (E), and resistance (R) for the Circuit on the P5 circuit on the Miniboard Series Trainer (simulator).
- **Calculate:** The student will use the principles of ohms law to calculate, current (I), voltage (E), and resistance (R) for the P5 Circuit using the measurements taken with the DMM on the Miniboard Series Trainer (simulator).
- **Compare:** 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 P5 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 P5 i_____

Measuring Amperage

Measure and Record the amperage of circuit P5 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) l_____

R3 voltage drop (h x j) m_____

Circuit P5 Total voltage drop (k + l + m) Sum n_____

Circuit P5 Total voltage drop Calculated (i x j) o_____

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 P5 (Rt) Resistance Total (I + j + k) Sum s_____

Circuit P5 Calculated Resistance Total (e x j) t_____

Calculate Amperage (E/R)

Circuit P5 (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	Calculated		< 5% difference Y /N
R1 voltage drop	b	k		
R2 voltage drop	c	l		
R3 voltage drop	d	m	**Volt drop sum**	
P5 total voltage drop	e	o	n	
Resistance	Measured	Calculated		
R1 resistance	f	p		
R2 resistance	g	q		
R3 resistance	h	r	**Resistance Sum**	
P5 resistance total (Rt)	i	t	s	
Amperage	Measured	Calculated		
P5 circuit amperage	j	u		