

ENSC 220

Fall 2016

Lab 1

Due: Sunday, October 2, 2016

Group members:

1. Name:

Student No.

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2. Name:

Student No.

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3. Name:

Student No.

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Each Lab group submits one completed worksheet based on the instructions given in Lab 1.

Lab 1: Verification of KVL and KCL Worksheet

DMM accuracy		
Voltage	Current	Resistance
<input type="text"/>	<input type="text"/>	<input type="text"/>

Resistor values				
	Nominal		Measured	
R1	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>
R2	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>
R3	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>

KVL

Expected (based
on measured
resistance and V_{in})

Measured

V_{in} (nominal)	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>
V_{R1}	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>
V_{R2}	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>

KCL

Expected (based
on measured
resistance and V_{in})

Measured

I_{R1}	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>
I_{R2}	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>
I_{R3}	<input type="text"/>	<input type="text"/>	\pm	<input type="text"/>

Discussion:

Show how equipment accuracy and measurement errors propagate through the expressions and affect the expected value of V_{R1} .

Explain how the measurement process affects the resistances, voltages, and currents that you are measuring (one or two sentences and/or a diagram).