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CS207

LAB 5

Part 1

Current measured in a circuit = 0.368 mA

Current calculation = 5 / (10 000 + 560 + 2200) = 0.0003918495

Resistance measured:

R1 = 552 Ohms

R2 = 9 820 Ohms

R3 = 2 160 Ohms

Current calculation with a measured resistance = 5 / (9820+ 552 + 2160) = 0.0003989786;

Difference between a calculated current and a read is:

0.0003989786 - 0.000368 = 0.0000309786 Amperes

Current difference is: 30.9786 Micro Amperes

Voltage drop 1 read = 4.81V and Arduino Pin (A1) read = 4.78V

Calculated value 0.0003989786 Amp \* 12200 Ohm = 4.86753892 V

Difference is: 4.86753892 - 4.81 = 0.05753892 V

Difference between calculated volts and direct readings is five hundreds of volt.

Voltage drop 2 read = 0.86V and Arduino Pin (A1) read = 0.84V

Calculated value 0.0003989786 Amp \* 2200 Ohms = 0.87775292 V

Difference is: 0.87775292 - 0.86 = 0.01775292V

Difference between calculated volts and direct readings is one hundreds of volt.

Part 2

When motor turns on it draws energy from the main circuit that drives a temperature sensor as well. Because all of the calculations was done when motor is off it has a slight effect at the supplied energy to temperature sensor positive terminal. Because of this our readings jumps a little when motor is plugged comparably with no motor load at the power rale.

Part 3

Code is posted in Github

yushchyr/ [CS207](https://github.com/yushchyr/CS207)/[CS207\_LAB\_5](https://github.com/yushchyr/CS207/tree/master/CS207_LAB_5)/LAB\_5.ino

<https://github.com/yushchyr/CS207/tree/master/CS207_LAB_5>