Modern Physics
Fall 2020

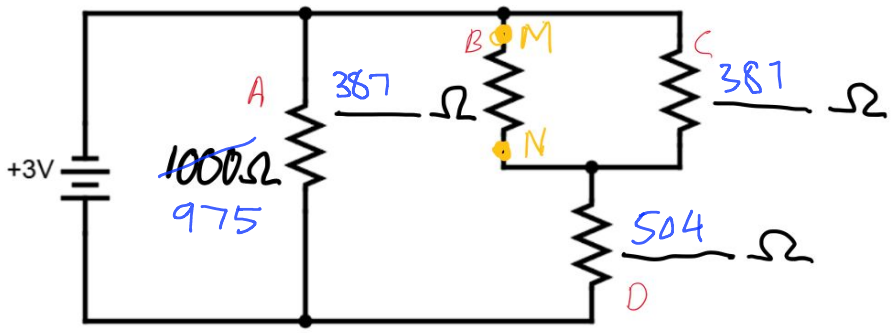
Name Albert H
Block 3
Date 21 Sep 2020!

Breadboard Activity

Measure the voltage of each of the AA Batteries 1.61 1.62

Put the AA batteries in the little black battery case and turn the switch to the ON position.
Measure the voltage of the two leads coming out of the case. 3.24

Turn the switch to the OFF position.
Build this circuit on your breadboard. Use resistors between about 100 Ω and 1000 Ω for resistors B, C, and D.
Put the resistance values of the resistors into the appropriate spaces on the diagram.



Verify that your partner has not made any short or open circuits and have your partner verify that your circuit is OK. Place a checkmark here when each is done. My circuit ▢ Their circuit ▢

Without making any measurements. Fill in the rest of the table below. Your teacher has already filled in row A for you.

Resistor	Resistance	Voltage	Current
A	1000 Ω	3 V	0.003 A
B	387		0.0021
C	387		
D	504	2.169	
B&C	193.5	0.83	
B, C, & D	699	3	0.00429
Whole circuit	407.4	0	0

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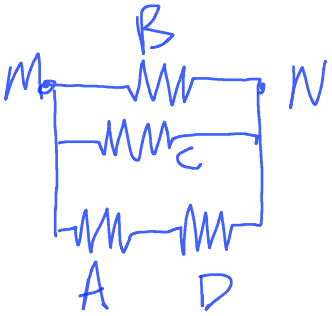
Measure the resistance between points M and N. Does it match what you wrote in your table for resistor B above? For B&C? If not, why not?

171 Ω doesn't match

because it's in the context of the larger circuit. I'm essentially measuring the resistance of this set of resistors:



(A+D)||(

Find a way to measure the resistance of B&C in parallel and verify your calculations for that pair, B, C, & D, and the whole circuit.

TURN ON THE BATTERY PACK! (If it was already on, put your name on the wall of shame.)

Verify the voltages and other resistances you listed in your table.

When you are done, TURN OFF THE BATTERY PACK.

Take the resistors out of the breadboard and put them back on the card in the correct place (you will need them again).

Turn OFF your multimeter.

Put all your equipment back in the baggie (or shoebox, or safe, or wherever you are storing your Modern Physics Kit).