

IB Physics SL2: Circuit Challenge: Use PhET Circuit Construction Kit- Virtual Lab version

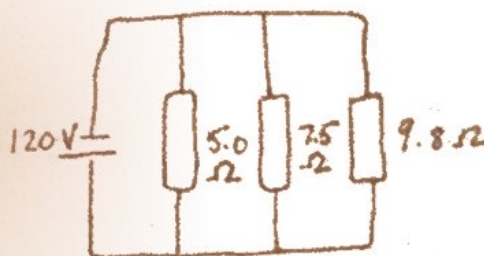
1. Fill in the table for this circuit. Show your work and then check your answer with PhET.



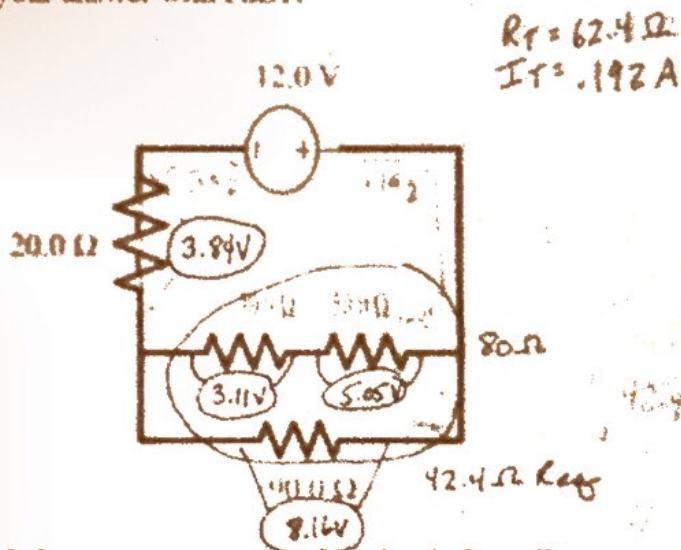
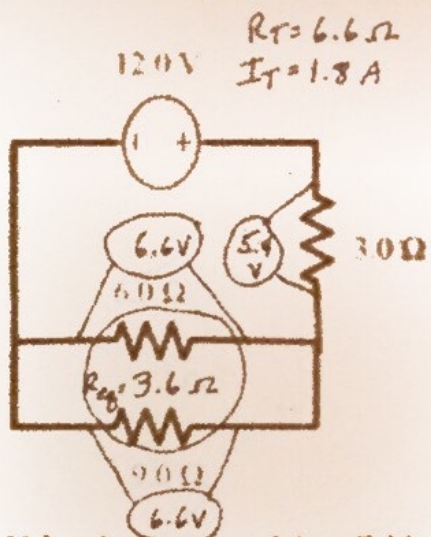
	R_1	R_2	R_3	Total	
V	1.95	3.75	8.25	14	V
I	.0025	.0025	.0025	.0025	A
R	780 Ω	1.5 kΩ	3.3 kΩ	5580	Ω
P	.0049	.0094	.0206	.0350	W

2. A parallel circuit has 3 resistors each on different paths connected to a 120 V potential difference. The resistors have resistances of 5.0 Ω, 7.5 Ω, and 9.8 Ω? Draw a picture of the circuit. Fill in the table for this circuit. Show your work and then check your answer with PhET.

Add units to measurements	5.0 Ω	7.5 Ω	9.8 Ω	total
V (Volts)	120	120	120	120
I (Amps)	24.0	16.0	12.2	52.2
R (Ohms) Ω	5.0	7.5	9.8	2.3
P (Watts)	2880	1920	122	4922



3. For both circuits: Determine the potential difference across and the current through each resistor. Show your work and then check your answer with PhET.



4. Using the battery and 4 available resistors below, construct a complex circuit that will produce a total resistance of _____ (get value from instructor) using PhET. Draw your diagram on the back of this page, neatly with all labels.

Use: 9 V battery , resistors: 220 KΩ, 100 KΩ, 50 KΩ, 40 KΩ, wire

270 270 270
 270 270 270
 270 270 270

