

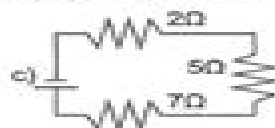
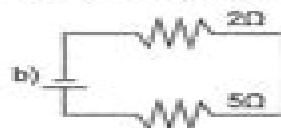
9.05 Electric Circuits Worksheet

[Place your name here]

_____/100

Answer all questions and show your work. Answers should be clearly circled, with units, and to the correct number of significant digits when appropriate.

1. Determine the equivalent (total) resistance for each of the following circuits below. (5 points each)



a) $1/R_{eq} = 1/7 + 1/5 + 1/2$ b) $R_{eq} = 5 + 2 = 7 \text{ (}\Omega\text{)}$ c) $R_{eq} = 7 + 5 + 2 = 14 \text{ (}\Omega\text{)}$

a) (70/59)=1.18_ohm_____ b) 7 ohm_____ c) 14 ohm_____

2. Fill out the table for the circuit diagramed at the right. (24 points)

Circuit Position	Voltage (V)	Current (A)	Resistance (Ω)
1	6	0.6	10.0
2	6	0.3	20.0
3	6	0.2	30.0
Total	6.00	1.1	$R_{eq} = 60/11 = 5.45 \text{ ohm}$



Explanation: the resistances are branched in parallel so they have the same voltage $U_1 = U_2 = U_3 = 6V$
 $I_1 = U_1/R_1 = 6/10 = 0.6A$ $I_2 = 6/20 = 0.3A$ $I_3 = 6/30 = 0.2A$

3. Fill out the table for the circuit diagramed at the right. (24 points)

Hint: If you are not quite sure how to solve a combination circuit, try using the [PhET Circuit Simulation](#) that you used in 9.04.

Circuit Position	Voltage (V)	Current (A)	Resistance (Ω)
1	2.7	0.27	10.0
2	3.3	0.165	20.0
3	3.3	0.11	30.0



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Guillaume Favre



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