

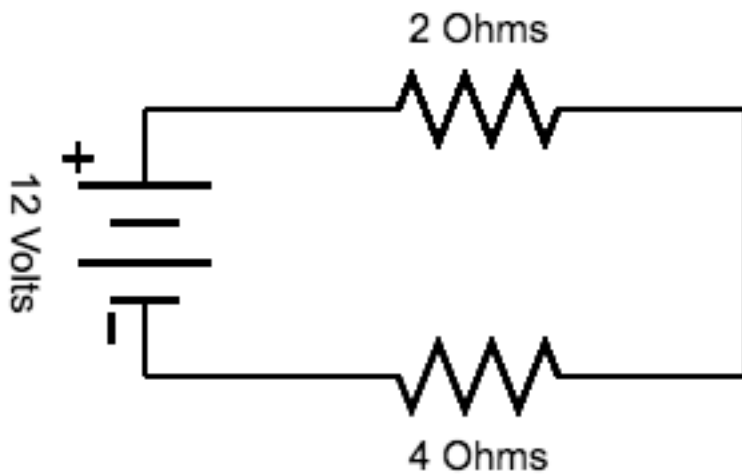
**Part C: Solving a Series Circuit**

The goal of these problems is to identify the voltage, current, and resistance of each element of a series circuit.

**Series Circuit Rules:**

- 1: For each element and the total circuit, the formula  $V = IR$ .
- 2: The *current* is the same for every element.
- 3: The *voltage* and *resistance* add up to the total for each circuit element.

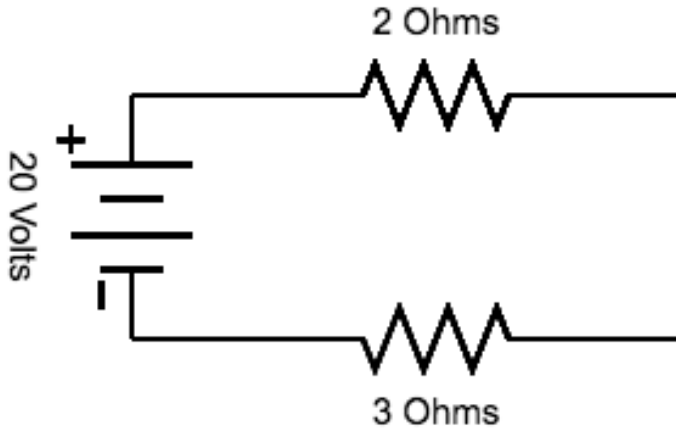
**C.1** A 12-volt battery, a 2-ohm resistor, and a 4-ohm resistor in series.



	Resistor 1	Resistor 2	Total Circuit
Voltage (V)			
Current (A)			
Resistance ( $\Omega$ )			

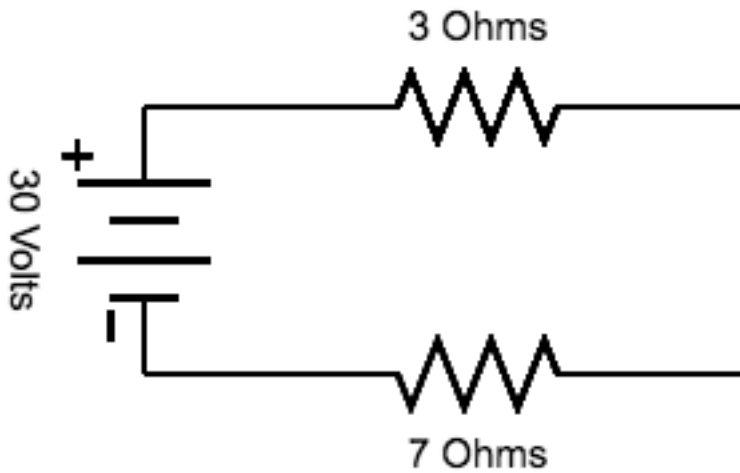
Name \_\_\_\_\_

**C.2** A 20-Volt battery, a 2-ohm resistor, and a 3-ohm resistor in series.



	Resistor 1	Resistor 2	Total Circuit
Voltage (V)			
Current (A)			
Resistance ( $\Omega$ )			

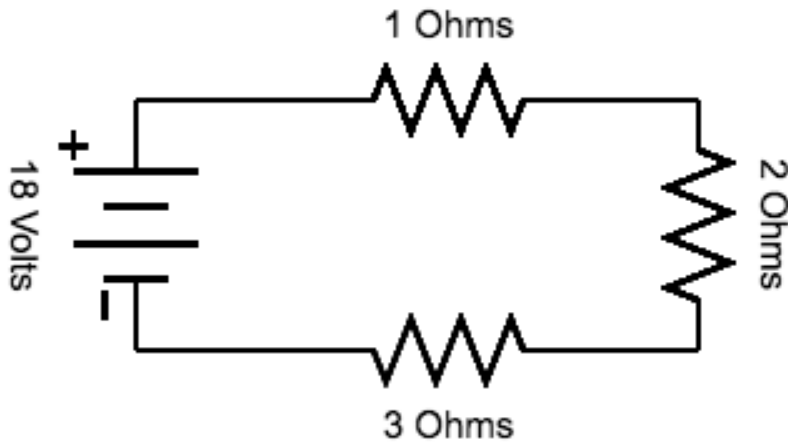
**C.3** A 30-volt battery, a 3-ohm resistor, and a 7-ohm resistor in series.



	Resistor 1	Resistor 2	Total Circuit
Voltage (V)			
Current (A)			
Resistance ( $\Omega$ )			

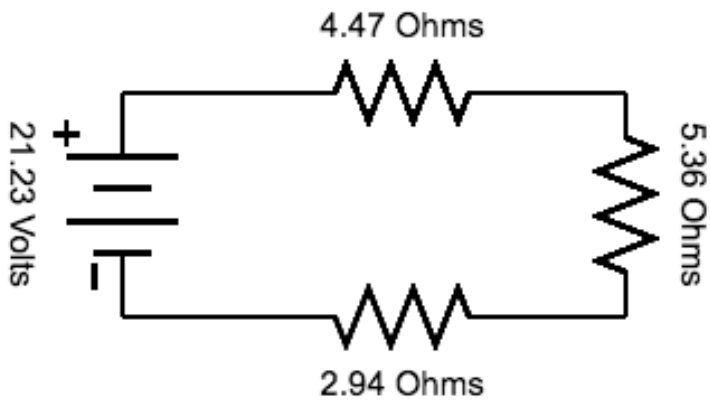
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**C.4** An 18-volt battery, a 1-ohm resistor, a 2-ohm resistor, and a 3-ohm resistor in series.



	Resistor 1	Resistor 2	Resistor 3	Total Circuit
Voltage (V)				
Current (A)				
Resistance ( $\Omega$ )				

**C.5** A 21.23-volt battery, a 4.47-ohm resistor, and a 5.36-ohm resistor, and a 2.94-ohm resistor in series. [use a calculator for this problem, round each cell of the table to two decimal places]



	Resistor 1	Resistor 2	Resistor 3	Total Circuit
Voltage (V)				
Current (A)				
Resistance ( $\Omega$ )				

Answers:

**C.1**

	Resistor 1	Resistor 2	Total Circuit
Voltage (V)	4	8	12
Current (A)	2	2	2
Resistance ( $\Omega$ )	2	4	6

**C.2**

	Resistor 1	Resistor 2	Total Circuit
Voltage (V)	8	12	20
Current (A)	4	4	4
Resistance ( $\Omega$ )	2	3	5

**C.3**

	Resistor 1	Resistor 2	Total Circuit
Voltage (V)	9	21	30
Current (A)	3	3	3
Resistance ( $\Omega$ )	3	7	10

**C.4**

	Resistor 1	Resistor 2	Resistor 3	Total Circuit
Voltage (V)	3	6	9	18
Current (A)	3	3	3	3
Resistance ( $\Omega$ )	1	2	3	6

**C.5**

	Resistor 1	Resistor 2	Resistor 3	Total Circuit
Voltage (V)	7.43	8.91	4.89	21.23
Current (A)	1.66	1.66	1.66	1.66
Resistance ( $\Omega$ )	4.47	5.36	2.94	12.77

Results are rounded to 3 significant figures.