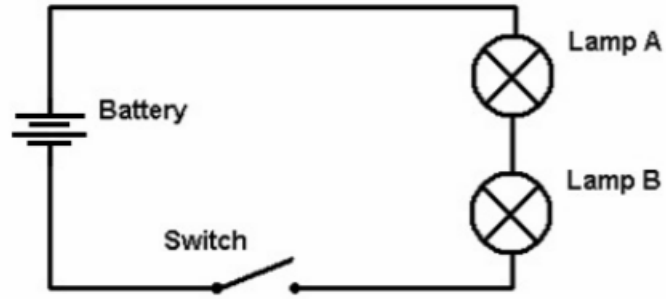
Name: Date: Class:

In a Row Math Worksheet Answers

1. Draw a circuit diagram for a circuit that has one battery and two light bulbs connected in series.



2. For the above circuit, one bulb has a resistance of 2 Ω and a second bulb has a resistance of 3 Ω. The total resistance for two bulbs in series is equal to the sum of their resistances.

Use this equation to find the total resistance of the circuit: $R_{total} = R_1 + R_2$

2 Ohms + 3 Ohms = 5 Ohms

3. For a circuit that has one battery and two light bulbs connected in series, one bulb has a resistance of 1 Ω, and the total resistance of the circuit is 6 Ω. What is the resistance of the second light bulb?

6 Ohms – 1 Ohm = 5 Ohms

4. If a circuit has two 1.5 V batteries in series, what is the voltage across the two batteries?

1.5 V + 1.5 V = 3.0 V

5. If a circuit has two 1.5 V batteries in series and one 3 Ω light bulb, what is the current in the circuit?

1.5 V + 1.5 V = 3.0 V

3.0 V / 3 Ohms = 1 Ampere

Use the Ohm's law equation: $I = \frac{V}{R}$

I = current (in amps)
V = voltage (batteries used)
R = resistance (bulbs used)