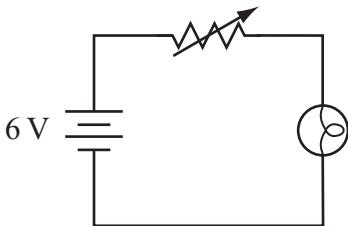


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A battery, a variable resistor, and a light bulb are shown in the circuit below.



- Explain the function of the battery in the circuit.
- Describe what will happen to the light bulb if the variable resistor is set at  $0 \Omega$ .
- If the variable resistor is set at  $18 \Omega$ , calculate the current in the circuit. Assume the resistance of the light bulb is  $12 \Omega$ . Show your calculations and include units in your answer.
- Describe what will most likely happen to the light bulb if the variable resistor's resistance is increased. Explain your answer.