Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) Why is the total resistance of a parallel circuit less than the smallest resistance?

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_____

2) What is Kirchhoff's voltage law?

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_____
_____

3) What would current (amperes) do if the voltage were doubled in a circuit?

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_____

4) What would be the effect of an open circuit in a series portion of a series-parallel circuit?

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5) What would be the effect of an open circuit in one leg of a parallel portion of a series-parallel circuit?

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1) The total resistance of a parallel circuit is less than the resistance of the smallest resistance leg because the current splits, creating multiple paths for the current to flow back to the power source, thereby effectively reducing the overall resistance of the circuit.
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2) Kirchhoff's Voltage Law states, "The voltage around any closed circuit is equal to the sum (total) of the voltage drops across the resistances."
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3) If the voltage was doubled, the current flow in amperes would also double assuming that the resistance in the circuit remains the same.
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4) If an open circuit were to occur in the series portion of a series-parallel circuit, it would stop the flow of current through the rest of the circuit or the parallel leg where the open occurred.
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5) If an open circuit were to occur in the parallel portion of a series-parallel circuit, it would stop the flow of current through the parallel leg where the open occurred.
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