User Manual—Calculations

# Calculating Total Impedance

Use the circuit diagrams below to calculate the total impedance for each circuit. Write your final answer in standard form: ****.

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| --- | --- |
| **Question 1** | **Question 2** |
|  | Diagram  Description automatically generated |
|  |  |

# Calculating Voltage

 is the formula that relates voltage, current, and total impedance. Use this formula in each of the following scenarios to calculate the voltage. Write your final answer in standard form: ****.

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| **Question 3** | **Question 4** |
| What is the voltage in a circuit with current  and impedance ? | What is the voltage in a circuit with current  and impedance ? |
|  |  |

# Calculating Current

Use the formula  in each of the following scenarios to calculate the current. Write your final answer in standard form: ****.

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| **Question 5** |
| What is the current in a circuit with voltage  and impedance ? |
|  |

# Definition

* The **complex conjugate** of **** is ****.
  + For example,  is the complex conjugate of .

Use the complex conjugate and the voltage formula (from above) to calculate the current. Write your final answer in standard form: ****.

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| --- |
| **Question 6** |
| What is the current in a circuit with voltage  and impedance ? |
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