

Technician Exam Ohm's Law Problems (Subelement topic T5D)

T5D04 - What is the resistance of a circuit in which a current of 3 amperes flows through a resistor connected to 90 volts?

Resistance equals Voltage divided by Current

$$R = E / I = 90 \text{ V} / 3 \text{ A} = 30 \Omega$$

T5D05 - What is the resistance in a circuit for which the applied voltage is 12 volts and the current flow is 1.5 amperes?

Resistance equals Voltage divided by Current

$$R = \text{voltage divided by current} = E / I = 12 \text{ V} / 1.5 \text{ A} = 8 \Omega$$

T5D06 - What is the resistance of a circuit that draws 4 amperes from a 12-volt source?

Resistance equals Voltage divided by Current

$$R = \text{voltage divided by current} = E / I = 12 \text{ V} / 4 \text{ A} = 3 \Omega$$

T5D07 - What is the current flow in a circuit with an applied voltage of 120 volts and a resistance of 80 ohms?

Current equals Voltage divided by Resistance

$$I = E / R = 120 \text{ V} / 80 \Omega = 1.5 \text{ A}$$

T5D08 - What is the current flowing through a 100-ohm resistor connected across 200 volts?

Current equals Voltage divided by Resistance

$$I = E / R = 200 \text{ V} / 100 \Omega = 2 \text{ A}$$

T5D09 - What is the current flowing through a 24-ohm resistor connected across 240 volts?

Current equals Voltage divided by Resistance

$$I = E / R = 240 \text{ V} / 24 \Omega = 10 \text{ A}$$

T5D10 - What is the voltage across a 2-ohm resistor if a current of 0.5 amperes flows through it?

Voltage equals Current multiplied by Resistance

$$V = I \times R = 0.5 \text{ A} \times 2 \Omega = 1 \text{ V}$$

T5D11 - What is the voltage across a 10-ohm resistor if a current of 1 ampere flows through it?

Voltage equals Current multiplied by Resistance

$$V = I \times R = 1 \text{ A} \times 10 \Omega = 10 \text{ V}$$

T5D12 - What is the voltage across a 10-ohm resistor if a current of 2 amperes flows through it?

Voltage equals Current multiplied by Resistance

$$V = I \times R = 2 \text{ A} \times 10 \, \Omega = 20 \text{ V}$$