



Math Study Strategies

Math for Electronics



Calculating Voltage

The voltage (V) measured across a resistor is **directly proportional** to the current (I) flowing to the resistor. The constant of variation is the resistance (Ohms). If 6 volts is measured across the resistor carrying a current of 2 amperes, find the resistance.

To solve this problem, first write down the given information and what the problem is asking for.

Given: Voltage = 6V, current = 2 amperes

Looking for: resistance (in **ohms**)

We use **Ohm's Rule** to express the **direct proportionality**:

$$V = IR$$

In Ohm's rule, V is the voltage measured in volts, I the the current measured in amperes, and R is the resistance measured in ohms. Because we are looking for the resistance, rewrite the equation in terms of R:

$$V = IR$$

$$IR = V$$

$$\frac{IR}{I} = \frac{V}{I}$$

$$R = \frac{V}{I}$$

Substituting the given values:

$$R = \frac{6}{2} = 3$$

Therefore the resistance in the electrical circuit will be:

$$3 \Omega$$