The Practise Ground

Class 10-12 Physics

Ohm's Law & Circuits

Current electricity essentials

1

$$V = IR$$

Ohm's law
Potential difference = current × resistance

2

$$P = VI$$

Electric power
Also $P = I^2R$ and $P = V^2/R$

3

$$R = R_1 + R_2$$

Resistors in series
Same current through each, voltages add

4

$$1/R = 1/R_1 + 1/R_2$$

Resistors in parallel
Same voltage across each, currents add

V	I	R	P
potential diff.	**current**	**resistance**	**power**
volt (V)	ampere (A)	ohm (Ω)	watt (W)

Remember

Series: total resistance is more than any single resistor.

Parallel: total resistance is less than the smallest resistor.

Quick example

A 12 V battery is connected across a 4 Ω resistor.

$I = V / R = 12 / 4 = 3$ A

$P = VI = 12 \times 3 = 36$ W

Think you've got it? Test yourself.

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