

Current, Voltage, Resistance, Power, and Capacitance

Equations: $I = q/t$ $V = IR$ $C = q/V$ $P = IV$ $V = W/q_0$ $W = Pt$

- 1) What current is passing through a wire if it takes 5342s to run down a battery that has a charge of 2700C?
- 2) What is the resistance in a circuit if the voltage is 12V and the current is 1.3A?
- 3) If a battery loses 3.8×10^6 J of energy in 1.3×10^5 s with a current of 0.88A, then what was the voltage of the battery?
- 4) What is the power of a circuit that has a voltage of 15V and a current of 0.45A?
- 5) What is the power of a circuit if it has 14.3Ω of resistance in a current of 0.55A?
- 6) What is the capacitance if 5.3×10^{-5} C of charge is stored at a voltage of 6.2V?
- 7) What is the potential difference between two objects if the capacitor has a capacitance of 8.3×10^{-6} F, and a discharge carries 12.2C of charge?
- 8) What is the power of a circuit if 12800J of work is done on 1300C of charge in 0.33s?
- 9) What current is created by a 3.4×10^{-6} F capacitor that has a 250V potential difference that flows in 0.11s?
- 10) How much will it cost to run a computer that has a 60W input and is on for 385h straight if it costs \$0.13 per kWh?

Answers

- 1) 0.505A
- 2) 9.2Ω
- 3) 33.2V
- 4) 6.75W
- 5) 4.33W
- 6) 8.55×10^{-6} F
- 7) 1.5×10^6 V
- 8) 38800W
- 9) 0.0077A
- 10) \$3.00