

Circuits-Current

- What is the current through a wire if 240 coulombs of charge pass through the wire in 2.0 minutes?
 - 120 A
 - 2.0 A
 - 0.50 A
 - 0.0083 A

- A 1.5-volt, AAA cell supplies 750 milliamperes of current through a flashlight bulb for 5.0 minutes, while a 1.5-volt, C cell supplies 750 milliamperes of current through the same flashlight bulb for 20 minutes. Compared to the total charge transferred by the AAA cell through the bulb, the total charge transferred by the C cell through the bulb is
 - half as great
 - twice as great
 - the same
 - four times as great



- The current traveling from the cathode to the screen in a television picture tube is 5.0×10^{-5} ampere. How many electrons strike the screen in 5.0 seconds?
 - 3.1×10^{24} electrons
 - 6.3×10^{18} electrons
 - 1.6×10^{15} electrons
 - 1.0×10^5 electrons

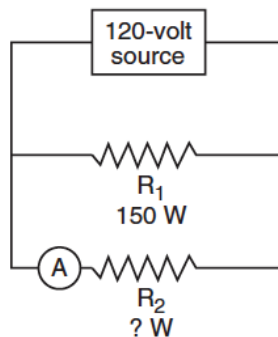
- Charge flowing at the rate of 2.50×10^{16} elementary charges per second is equivalent to a current of
 - 2.50×10^{13} A
 - 6.25×10^5 A
 - 4.00×10^{-3} A
 - 2.50×10^{-3} A

- The current through a lightbulb is 2.0 amperes. How many coulombs of electric charge pass through the lightbulb in one minute?
 - 60 C
 - 2.0 C
 - 120 C
 - 240 C



- If 10 coulombs of charge are transferred through an electric circuit in 5.0 seconds, then the current in the circuit is
 - 0.50 A
 - 2.0 A
 - 15 A
 - 50 A
- A charge of 30 coulombs passes through a 24-ohm resistor in 6.0 seconds. What is the current through the resistor?
 - 1.3 A
 - 5.0 A
 - 7.5 A
 - 4.0 A

- The diagram below shows two resistors, R_1 and R_2 , connected in parallel in a circuit having a 120-volt power source. Resistor R_1 develops 150 watts and resistor R_2 develops an unknown power. Ammeter A in the circuit reads 0.50 ampere.



Calculate the amount of charge passing through resistor R_2 in 60 seconds. [Show all work, including the equation and substitution with units.]

- What is the current in a wire if 3.4×10^{19} electrons pass by a point in this wire every 60 seconds?
 - 1.8×10^{-18} A
 - 3.1×10^{-11} A
 - 9.1×10^{-2} A
 - 11 A