VideoPlato Academy

Mass and Weight

Equations:

Q=It **V=IR** **E=QV** **P=VI** **E=Pt**

1. What does the symbol "Q" represent in the equation Q=It?

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2. Define the term "current" in the context of electricity.

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3. If a current of 2A flows through a conductor for 5 seconds, what is the total charge that passes through?

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4. Express Ohm's Law mathematically.

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5. What is the unit of resistance?

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6. If a resistor has a resistance of 10 ohms and a current of 0.5A flows through it, what is the potential difference across the resistor?

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7. Calculate the resistance of a wire if a potential difference of 12 volts produces a current of 3A through it.

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8. State the equation that relates power, current, and potential difference.

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9. If a device operates at 6V and draws a current of 2A, what is the power consumed?

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10. A lamp has a power rating of 60W. What is the current flowing through it if it is connected to a 240V power supply?

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11. Calculate the energy transferred when a charge of 4C flows through a potential difference of 12V.

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12. A battery supplies a current of 0.5A to a circuit for 2 hours. How much charge does it deliver?

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13. Calculate the energy consumed by a 100W bulb in 5 hours of operation.

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14. A resistor has a resistance of 20 ohms and a current of 0.5A flowing through it. What is the potential difference across the resistor?

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15. Calculate the power dissipated by a resistor with a resistance of 30 ohms when a current of 2A flows through it.

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16. A circuit has a potential difference of 6V and a current of 0.5A. What is the total resistance in the circuit?

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17. A current of 3A flows through a resistor, dissipating 24W of power. Calculate the resistance of the resistor.

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18. Explain why wires are often made of materials with low resistance.

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19. Calculate the total charge passing through a circuit if a current of 0.2A flows for 10 seconds.

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20. A resistor has a resistance of 50 ohms. What is the potential difference across it if a current of 0.4A flows through it?

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21. Define electric power and its unit.

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22. If a battery supplies 12V to a circuit and a current of 2A flows through it, how much energy does it deliver in 30 minutes?

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23. A circuit has a resistance of 40 ohms and a current of 0.5A. What is the potential difference across the circuit?

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24. A resistor has a resistance of 20 ohms and a current of 2A flowing through it. Calculate the power dissipated by the resistor.

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25. Explain how doubling the current through a resistor affects the power dissipated by it.

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26. A circuit has a resistance of 30 ohms, and a potential difference of 12V is applied across it. Calculate the power dissipated.

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27. Discuss the relationship between power dissipation and resistance when the potential difference across a circuit is held constant.

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28. If a resistor dissipates 64W of power when connected to a 16V power supply, what is its resistance?

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