

50 Ramped Real-Life GCSE Physics Electricity Calculation Questions

1. A phone charger transfers 900 C of charge in 3 minutes. Calculate the current.
2. A bicycle light draws a current of 0.40 A for 5 minutes. Calculate the charge transferred.
3. An electric toothbrush transfers 1200 C of charge at a current of 2.0 A. Calculate the time taken.
4. A smartwatch battery transfers 450 C of charge in 15 minutes. Calculate the current.
5. A toy train motor draws a current of 0.80 A for 250 s. Calculate the charge transferred.
6. An electric scooter battery transfers 7200 C of charge at a current of 4.0 A. Calculate the time taken in minutes.
7. A security floodlight transfers 1.8 kC of charge in 10 minutes. Calculate the current.
8. A train door motor uses a current of 5.0 A for 40 s each time the doors open. Calculate the charge transferred.
9. A phone battery transfers 2700 C of charge in 30 minutes. Calculate the current.
10. A drone motor transfers 4.8 kC of charge in 8 minutes. Calculate the current.
11. A camping lantern has a resistance of 15 Ω and a current of 0.80 A. Calculate the voltage across the lantern.
12. A heated blanket operates at 120 V and draws a current of 1.5 A. Calculate its resistance.
13. A garden pond pump is connected to a 24 V supply and has a resistance of 8.0 Ω . Calculate the current.
14. A fan operates from a 230 V mains supply and draws 2.0 A. Calculate its resistance.
15. A torch bulb has a voltage of 4.5 V and a resistance of 9.0 Ω . Calculate the current.
16. A model railway locomotive has a resistance of 12 Ω and draws a current of 1.5 A. Calculate the voltage.

17. An electric heater is connected to a 230 V supply and has a resistance of 46 Ω . Calculate the current.
18. A loudspeaker draws 3.0 A from a 12 V supply. Calculate its resistance.
19. An electric fence has a resistance of 500 Ω and carries a current of 1.2 A. Calculate the voltage.
20. A battery-powered winch draws 8.0 A from a 48 V battery. Calculate the resistance of the motor.
21. A battery transfers 1200 J of energy while moving 400 C of charge. Calculate the voltage.
22. A power bank has a voltage of 5.0 V and transfers 2400 C of charge. Calculate the energy transferred.
23. A rechargeable drill battery transfers 18 000 J of energy while moving 1500 C of charge. Calculate the voltage.
24. A torch battery transfers 2700 J of energy at a voltage of 4.5 V. Calculate the charge transferred.
25. An electric bike battery has a voltage of 36 V and transfers 5000 C of charge. Calculate the energy transferred.
26. A battery transfers 9600 J of energy at 12 V. Calculate the charge transferred.
27. An electric car battery transfers 720 000 J of energy while moving 20 000 C of charge. Calculate the voltage.
28. A camera battery supplies 4800 J of energy at 8.0 V. Calculate the charge transferred.
29. A solar-powered garden light transfers 1800 J of energy while moving 600 C of charge. Calculate the voltage.
30. A tablet battery transfers 36 kJ of energy at 12 V. Calculate the charge transferred.
31. A phone charger operates at 5.0 V and draws a current of 3.0 A. Calculate the power.
32. A kettle draws 13 A from a 230 V supply. Calculate the power.
33. A hairdryer has a power rating of 1840 W and is connected to a 230 V supply. Calculate the current.
34. A microwave oven draws 6.0 A from a 230 V supply. Calculate the power.
35. An electric heater has a power output of 2760 W when connected to a 230 V supply. Calculate the current.

36. A laptop charger provides 90 W and draws a current of 4.5 A. Calculate the voltage.
37. A caravan light uses 36 W from a 12 V battery. Calculate the current.
38. An electric bike motor uses 540 W from a 36 V battery. Calculate the current.
39. A washing machine draws 9.0 A from a 230 V supply. Calculate the power.
40. A games console uses 230 W from a 230 V supply. Calculate the current.
41. A torch bulb has a resistance of $10\ \Omega$ and draws a current of 0.30 A. Calculate the voltage across the bulb and the power of the bulb.
42. A portable heater has a resistance of $23\ \Omega$ and is connected to a 230 V supply. Calculate the current flowing through it and the power it uses.
43. A loudspeaker has a resistance of $6.0\ \Omega$ and draws a current of 2.0 A. Calculate the voltage and then the power.
44. A phone charger transfers 1200 C of charge in 4 minutes and operates at 5.0 V. Calculate the current and then the power.
45. A battery transfers 7200 J of energy while moving 1800 C of charge. A device connected to it draws a current of 2.5 A. Calculate the voltage and then the power.
46. An electric scooter battery transfers 72 000 J of energy while moving 4000 C of charge. The motor draws 15 A. Calculate the voltage and then the power.
47. A camping lantern has a resistance of $24\ \Omega$ and is connected to a 12 V battery. Calculate the current flowing through the lantern and the power it uses.
48. An electric car charging cable has a resistance of $0.40\ \Omega$ and carries a current of 32 A. Calculate the power wasted as heating in the cable.
49. A toaster has a resistance of $25\ \Omega$ and draws a current of 9.2 A. Calculate the voltage across the toaster and then calculate the power using two different methods.

50. An electric train motor has a resistance of $3.5\ \Omega$ and draws a current of $80\ \text{A}$. Calculate the voltage across the motor and then calculate the power using two different methods.