

Mixed Transformer Equation and Power Equation Questions

Use the transformer equation and the power equation where appropriate.
Assume all transformers are 100% efficient.

1. A phone charger transforms 230 V to 5 V. The primary coil has 920 turns. Calculate the number of turns on the secondary coil.
2. A transformer has 600 turns on the primary coil and 120 turns on the secondary coil. The input voltage is 240 V. Calculate the output voltage.
3. A doorbell transformer changes 230 V to 12 V. The primary current is 0.20 A. Calculate the secondary current.
4. A transformer has an input voltage of 240 V and an output voltage of 24 V. If the primary coil has 1200 turns, calculate the number of turns on the secondary coil.
5. A transformer supplies a garden lighting system. The input voltage is 230 V and the output voltage is 23 V. The primary current is 0.50 A. Calculate the output current.
6. A transformer has 1500 turns on the primary coil and 300 turns on the secondary coil. The secondary current is 4.0 A. Calculate the primary current.
7. A railway transformer has an input voltage of 25 000 V and an output voltage of 250 V. The primary coil contains 5000 turns. Calculate the number of turns on the secondary coil.
8. A factory transformer receives 11 000 V and 8.0 A. The output voltage is 440 V. Calculate the output current.
9. A transformer has 2000 turns on the primary coil and 80 turns on the secondary coil. The primary voltage is 230 V and the primary current is 1.5 A. Calculate:
 - a) The output voltage.
 - b) The output current.
10. A stage lighting transformer has 240 V across the primary coil and 24 V across the secondary coil. The primary coil has 1800 turns and the primary current is 2.5 A.
 - a) Calculate the number of turns on the secondary coil.
 - b) Calculate the secondary current.
 - c) State whether the transformer is step-up or step-down.