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PP E – Electric Power P. 621

1. A 1050 W electric toaster operates on a household circuit of 120V. What is the resistance of the wire that makes up the heating element of the toaster?
2. A small electronic device is rated at 0.25 W when connected to 120 V. What is the resistance of this device?

1. A calculator is rated at 0.10 W and has an internal resistance of 22 Ω. What battery potential difference is required for this device?
2. An electric heater is operated by applying a potential difference of 50.0V across a wire of total resistance 8.00 Ω. Find the current in the wire and the power rating of the heater.
3. What would the current in the heater in Problem 4 be if the wire developed a short and the resistance was reduced by 0.100 Ω?