39. (a) The power dissipated, the current in the heater, and the potential difference across the heater are related by $P = iV$. Therefore,

$$i = \frac{P}{V} = \frac{1250 \text{ W}}{115 \text{ V}} = 10.9 \text{ A}.$$

(b) Ohm's law states $V = iR$, where R is the resistance of the heater. Thus,

$$R = \frac{V}{i} = \frac{115 \text{ V}}{10.9 \text{ A}} = 10.6 \text{ } \Omega.$$

(c) The thermal energy E generated by the heater in time $t = 1.0 \text{ h} = 3600 \text{ s}$ is

$$E = Pt = (1250 \text{ W})(3600 \text{ s}) = 4.50 \times 10^6 \text{ J}.$$