

Problem 27.39

Power dissipated by the lamp:

$$\begin{aligned} P &= iV = (1.70 \text{ A})(110 \text{ V}) \\ &= 187 \text{ W} \end{aligned}$$

Energy used in 24 hours in kW-h:

$$(.187 \text{ kW})(24 \text{ h}) = 4.49 \text{ kW} \cdot \text{h}$$

Cost of energy for one 24 hour (day) use:

$$\left(4.49 \frac{\text{kW} \cdot \text{h}}{\text{day}} \right) \left(\frac{\$0.11}{\text{kW}} \right) = \mathbf{\$0.49}$$