

27. (a) Eq. 31-10 leads to

$$\mathcal{E} = BLv = (0.350 \text{ T})(0.250 \text{ m})(0.550 \text{ m/s}) = 0.0481 \text{ V} .$$

(b) By Ohm's law, the induced current is $i = 0.0481 \text{ V}/18.0 \Omega = 0.00267 \text{ A}$. By Lenz's law, the current is clockwise in Fig. 31-46.

(c) Eq. 27-22 leads to $P = i^2 R = 0.000129 \text{ W}$.