

Solutions

Each answer shows the steps, then the **result**.

2.1

- the induced emf equals the negative rate of change of magnetic flux

2.2

- $\varepsilon = BLv = 0.50 \times 0.20 \times 3.0 = 0.30 \text{ V}$

2.3

- the induced current opposes the change in flux that produces it

3.1 A

3.2 B

3.3

(a)

- $|\varepsilon| = N \left| \frac{\Delta\Phi_B}{\Delta t} \right| = 200 \times \frac{0.020 - 0.005}{0.10} = 30 \text{ V}$

(b)

- Lenz's law (it opposes the change)