

36. The magnetic force on the wire is

$$\begin{aligned}\vec{F}_B &= i\vec{L} \times \vec{B} = iL\hat{i} \times (B_y\hat{j} + B_z\hat{k}) = iL(-B_z\hat{j} + B_y\hat{k}) \\ &= (0.50 \text{ A})(0.50 \text{ m})[-(0.010 \text{ T})\hat{j} + (0.0030 \text{ T})\hat{k}] \\ &= (-2.5 \times 10^{-3}\hat{j} + 0.75 \times 10^{-3}\hat{k}) \text{ N} .\end{aligned}$$