

73. The contribution to the force by the magnetic field ($\vec{B} = B_x \hat{i} = -0.020 \hat{i}$ T) is given by Eq. 29-2:

$$\begin{aligned}\vec{F}_B &= q\vec{v} \times \vec{B} \\ &= q \left((17000 \hat{i} \times B_x \hat{i}) + (-11000 \hat{j} \times B_x \hat{i}) + (7000 \hat{k} \times B_x \hat{i}) \right) \\ &= q \left(-220 \hat{k} - 140 \hat{j} \right)\end{aligned}$$

in SI units. And the contribution to the force by the electric field ($\vec{E} = E_y \hat{j} = 300 \hat{j}$ V/m) is given by Eq. 23-1: $\vec{F}_E = qE_y \hat{j}$. Using $q = 5.0 \times 10^{-6}$ C, the net force (with the unit newton understood) on the particle is

$$\vec{F} = 0.0008 \hat{j} - 0.0011 \hat{k} \ .$$