

$$\begin{aligned}\text{Electric force} &= E q = \frac{V q}{d} \\ &= \frac{300 \times 1.602 \times 10^{-19}}{0.1 \text{ m}} \\ &= 4.806 \times 10^{-16}\end{aligned}$$

$$\begin{aligned}\text{Magnetic force} &= (B \times v) q \\ &= \left(\frac{\mu_0 N i}{l} \times v \right) q \\ &= 4\pi \times 10^{-7} \text{ T m A}^{-1} \times 25 \text{ m} \times 1.194 \text{ A} \times 1.55 \text{ m/s} \times 1.602 \times 10^{-19} \text{ C} \\ &= 4.806 \times 10^{-16}\end{aligned}$$

Hence the electric and magnetic forces are equal, and from the right hand rule, opposite.

✓ 3/4 This is correct, but you are only using the equations already employed. Try to look at trends, i.e. it makes sense that i is larger if v is larger, or if N/l , or v are smaller.

$$\frac{24}{30}$$

good.