

Solutions

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

2.1

- $F = BI\ell = 0.50 \times 3.0 \times 0.20 = 0.30 \text{ N}$

2.2

- they attract each other

2.3

- $B = \frac{\mu_0 I}{2\pi r} = \frac{(4\pi \times 10^{-7})(5.0)}{2\pi(0.10)} = 1.0 \times 10^{-5} \text{ T}$

3.1 B

3.2 B

3.3

(a)

- $F = BI\ell = 0.25 \times 4.0 \times 0.50 = 0.50 \text{ N}$

(b)

- it doubles to 1.0 N ($F \propto I$)