

Solutions

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

2.1

- $B = \frac{\mu_0 I}{2\pi r} = \frac{(4\pi \times 10^{-7})(8.0)}{2\pi(0.050)} = 3.2 \times 10^{-5} \text{ T}$

2.2

- the right-hand rule (grip rule)

2.3

- $B = \frac{\mu_0 I}{2R}$

3.1 A

3.2 A

3.3

(a)

- $B = \frac{\mu_0 I}{2R} = \frac{(4\pi \times 10^{-7})(5.0)}{2(0.10)} = 3.1 \times 10^{-5} \text{ T}$

(b)

- it doubles ($B \propto I$)