

Problem 30.3

This is a very simple problem that requires only the evaluation of the magnetic field function associated with a current carrying wire. As such:

$$\begin{aligned} B &= \frac{\mu_0 i}{2\pi r} \\ &= \frac{(4\pi \times 10^{-7} \text{ T} \cdot \text{m/A})(1 \text{ A})}{2\pi (.25 \text{ m})} \\ &= 1.6 \times 10^{-6} \text{ T} \end{aligned}$$