

Special Problem 7-4.1

The **current density** in a given region is given as:

$$\mathbf{J}(\bar{r}) = \begin{cases} \frac{6(1-\rho)}{\mu_0} \hat{a}_z & 0 < \rho < 1 \\ 0 & \rho > 1 \end{cases}$$

Determine the **magnetic flux density** produced by this current density.