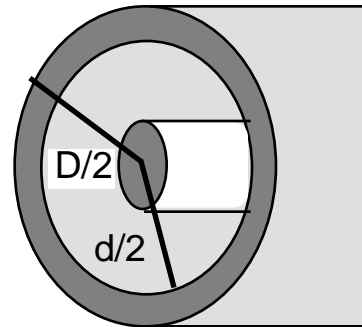


The electrified pipe

A thin wire of permittivity $\mu = \mu_0$ carrying a current I lies along the axis of a hollow iron cylinder of inner diameter d and outer diameter D . An equal and opposite return current is distributed uniformly through the iron. The permittivity of the iron is $\mu > \mu_0$.

a. Find H , B , and M

- between the wire and iron
- inside the iron
- outside the pipe



b. Find the equivalent currents, volume and surface current densities.

HINT: compare posted solution to LCL Problem 20-7