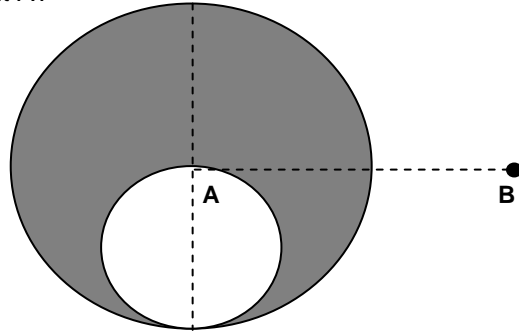


Problems of the Week 7

Always show your work to receive credit (NO WORK=NO CREDIT)

1. A long copper rod of radius $R=4.00\text{cm}$ has a cylindrical cavity of radius $R/2$ as shown below. The rod carries a current of 300.0A into the plane of the page. What is the magnitude and direction of the magnetic field at point A?

- A. $(-10.0\hat{i})\text{gauss}$
- B. $(-30.0\hat{i})\text{gauss}$
- C. $(-60.0\hat{i})\text{gauss}$
- D. $(20.0\hat{i})\text{gauss}$
- E. $(30.0\hat{i})\text{gauss}$



2. What is the magnitude and direction of the magnetic field at point B, a distance $2R$ from the center of the rod?
- A. $(6.20\hat{i} - 4.43\hat{j})\text{gauss}$
 - B. $(-3.50\hat{i} - 2.56\hat{j})\text{gauss}$
 - C. $(-0.59\hat{i} - 7.65\hat{j})\text{gauss}$
 - D. $(0.98\hat{i} - 0.68\hat{j})\text{gauss}$
 - E. $(-5.21\hat{i} - 0.76\hat{j})\text{gauss}$