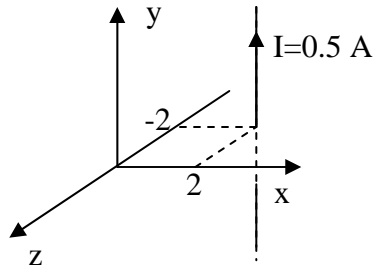
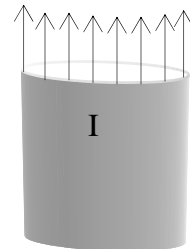


Homework 8.

- 1) Use Ampere's law to obtain  $\vec{H}$  due to an infinitely long, straight filament of current  $I$ .
- 2) A current filament of  $0.5\text{ A}$  in the  $\hat{a}_y$  direction is parallel to the  $y$  axis at  $x = 2\text{ m}$ ,  $z = -2\text{ m}$ . find  $\vec{H}$  at the origin.



- 3) A thin cylindrical conductor of radius  $b$ , infinite in length, carries a current  $I$ . Find  $\vec{H}$  at all points using Ampere's law.



- 4) Determine  $\vec{H}$  for a solid cylindrical conductor of radius  $b$ , where the current  $I$  is uniformly distributed over the cross section.

