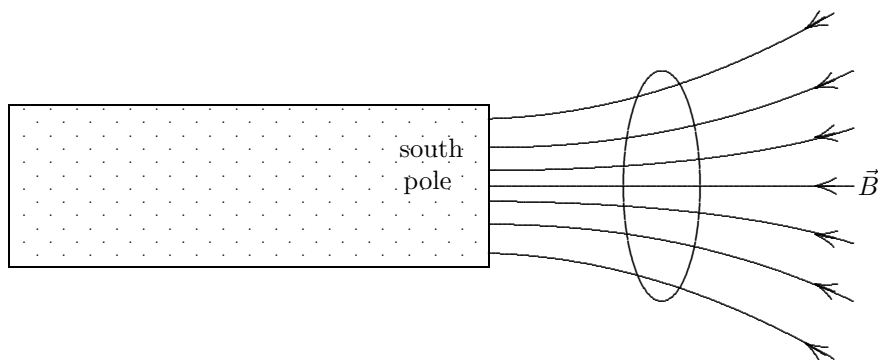


16. (a) A sketch of the field lines (due to the presence of the bar magnet) in the vicinity of the loop is shown below:



- (b) The textbook, in §32-7, makes it clear that  $\vec{\mu}$  is in the same direction as  $\vec{B}$ , and the effect of  $\vec{F}$  is to move the material towards regions of larger  $|\vec{B}|$  values. The direction of the magnetic moment vector (of our loop) is toward the right in our sketch.
- (c) See our comments in part (b). Since the size of  $|\vec{B}|$  relates to the “crowdedness” of the field lines, we see that  $\vec{F}$  is towards the left in our sketch.