## Special Problem 8-3.3

Two slabs of dissimilar magnetic material share a common boundary, as shown below.

It is known that the magnetic flux density in region 1 (the left side) is:

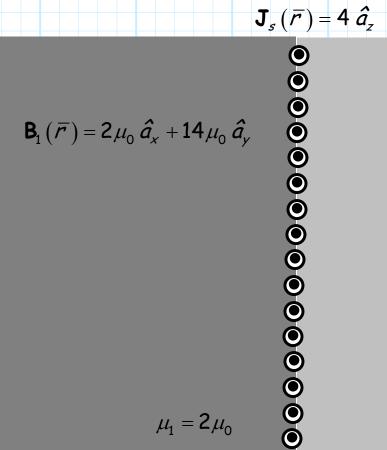
$$\mathbf{B}_{1}(\overline{r}) = 2\mu_{0} \,\hat{a}_{x} + 14\mu_{0} \,\hat{a}_{y} \quad \left[ \frac{\mathbf{W}}{m^{2}} \right]$$

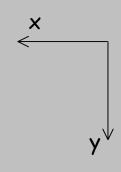
Likewise, a surface current  $\mathbf{J}_{s}\left(\bar{r}\right)=4~\hat{a}_{z}$  is flowing along the interface as shown below.

In region 2 (the right side), determine (in terms of  $\mu_0$ ):

- 1) the magnetic flux density.
- 2) the magnetic field.

$$\mathbf{J}_{s}\left(\bar{r}\right)=4\,\hat{a}_{z}$$





$$\mu_2 = 3\mu_0$$