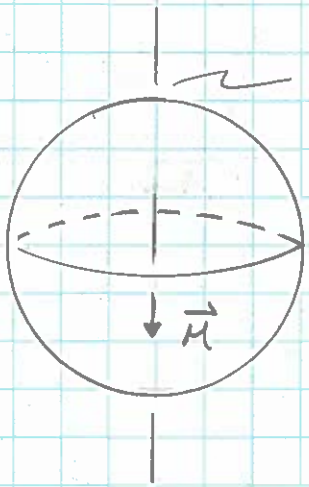
$\mathcal{M} = 8\times10^{22}\ A m^2$



$R_E = 6.37\times10^{6}\ m$

a.) On the axis of the dipole

$$\vec{B} = \frac{\mu_0}{4\pi}\frac{2\vec{\mathcal{M}}}{z^3}$$

So $|\vec{B}| = \frac{\mu_0}{4\pi}\frac{2\mathcal{M}}{R^3} = \underline{6.19\times10^{-5}\ T}$

which is close to $5\times10^{-5}\ T$ in table 29.1

b.) for $\mathcal{M} = 8\times10^{22}\ A m^2$

$$\mathcal{M} = IA = I\pi R^2$$

So, $$I = \frac{\mathcal{M}}{\pi R^2} = \underline{6.276\times10^{8}\ A}$$