

49. The magnitude of the magnetic dipole moment is given by $\mu = NiA$, where N is the number of turns, i is the current, and A is the area. We use $A = \pi R^2$, where R is the radius. Thus,

$$\mu = (200)(0.30 \text{ A})\pi(0.050\text{m})^2 = 0.47 \text{ A}\cdot\text{m}^2 .$$