9.11) A TYPICAL ATOMIC MAGNETIC MOMENT IS OF ORDER $10^{-23}\ A\cdot m^2$. ASSUMING THIS IS THE RESULT OF A CURRENT $i$ AROUND A SINGLE LOOP OF RADIUS 0.1nm, FIND $i$.

GIVEN $\mu = IA$, SOLVE FOR $I$

$$I = \frac{\mu}{A} = \frac{\mu}{\pi r^2}$$

$$I = \frac{10^{-23}}{\pi(0.1\times10^{-9})^2} = \frac{10^{-23}}{3.14\times10^{-20}}$$

$$I = 3.18\times10^{-4}\ A = \boxed{0.318\ mA = I}$$

NOT A MINISCULE CURRENT, BUT NOT HUGE.