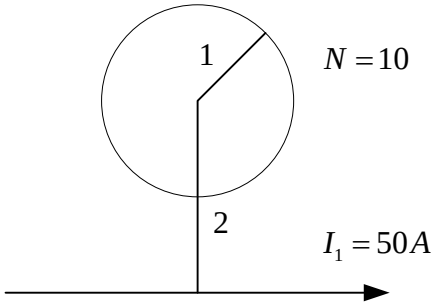
5-11



B at center due to wire:

$B2\pi r = \mu_0 I_1$

$$B = \frac{\mu_0 50}{2\pi(2)}$$

$$\vec{B} = \frac{25\mu_0}{2\pi}\odot$$

B from loop: $-$

$$B = \left(\frac{\mu_0 I_2}{2a}\right)N = \left(\frac{\mu_0 I_2}{2(1)}\right)(10)$$

$$B = 0 \Rightarrow \frac{25\mu_0}{2\pi} = \mu_0\frac{10I}{2}$$

$\Rightarrow I = 0.8A$ counterclockwise