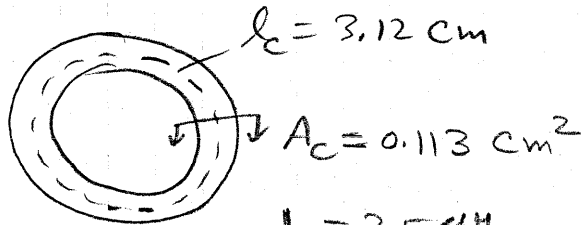


Problem 3-12



$$L = 25 \mu\text{H}$$

$$\mu_r = 125$$

3-12

$$L = N^2 \Phi = N^2 \frac{A_c (\mu_0 \mu_r)}{l_c}$$

$$\therefore N = \left[\frac{L l_c}{A_c \mu_0 \mu_r} \right]^{1/2} \quad \mu_0 = 4\pi \times 10^{-7} \text{ H/m}$$

$$= \left[\frac{25 \times 10^{-6} \times 3.12 \times 10^{-2}}{0.113 \times 10^{-4} \times 4\pi \times 10^{-7} \times 125} \right]^{1/2}$$

≈ 21 turns