

### Problem 3-14

In Problem 3-11, it was calculated that

$$N_{\text{pri}} = 14, \quad A_c = 0.634 \text{ cm}^2$$

$$\begin{aligned} \therefore L_m &= N^2 P = N^2 \frac{A_c (\mu_0 \mu_r)}{l_c} \\ &= 14^2 \times \frac{0.634 \times 10^{-4} \times 4\pi \times 10^{-7} \times 2500}{3.15 \times 10^{-2}} \\ &= 1.24 \text{ mH} \end{aligned}$$