

98. (a) $N = 2.0 \text{ m} / 2.5 \text{ mm} = 800$.

(b) $L/l = \mu_0 n^2 A = (4\pi \times 10^{-7} \text{ H/m}) (800/2.0 \text{ m})^2 (\pi)(0.040 \text{ m})^2 / 4 = 2.5 \times 10^{-4} \text{ H}$.