Chapter 6, Solution 43.

The current in an 80-mH inductor increases from 0 to 60 mA. How much energy is stored in the inductor?

Solution

$$w = L\int_{-\infty}^{t} i\,dt = \frac{1}{2}Li^2(t) - \frac{1}{2}Li^2(-\infty)$$

$$= \frac{1}{2}x80x10^{-3}x\left(60x10^{-3}\right)^2 - 0$$

= **144 μJ**.