Chapter 6, Solution 49.

Find the equivalent inductance of the circuit in Fig. 6.72. Assume all inductors are 10 mH.

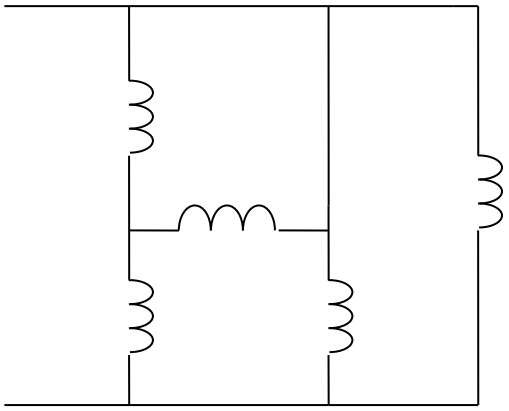
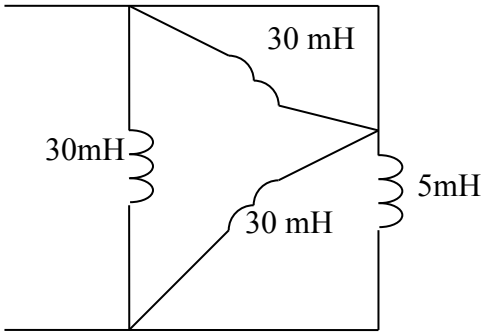


Figure 6.72
For Prob. 6.49.

Solution

Converting the wye-subnetwork to its equivalent delta gives the circuit below.



30//0 = 0, 30//5 = 30x5/35=4.286

$$L_{eq} = 30 // 4.286 = \frac{30x4.286}{34.286} = \underline{3.75\ \text{mH}}$$