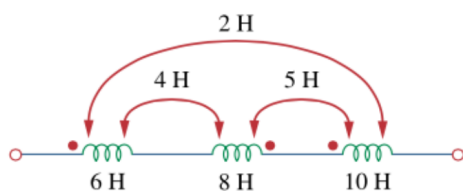For the three coupled coils in Fig. 13.72, calculate the total inductance.
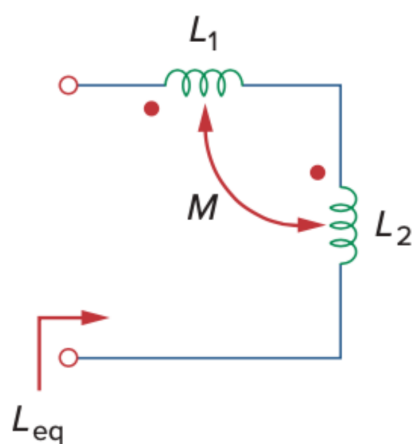

1.

13.4 (a) For the coupled coils in Fig. 13.74(a), show that
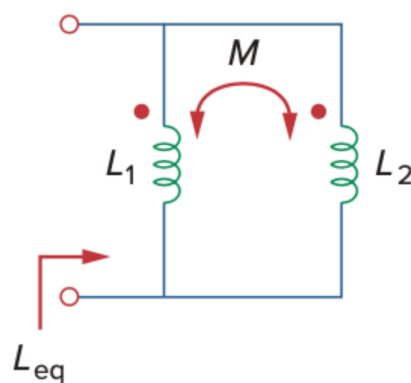
$$L_{eq} = L_1 + L_2 + 2M$$

(b) For the coupled coils in Fig. 13.74(b), show that

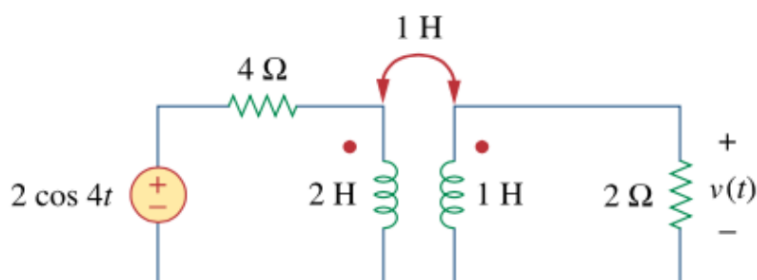$$L_{eq} = \frac{L_1 L_2 - M^2}{L_1 + L_2 - 2M}$$

(a)   (b)
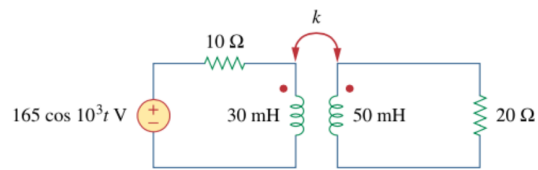
2.

Chapter 13, Problem 8.

ps **ML** Find $v(t)$ for the circuit in Fig. 13.77.

3.

In the circuit of Fig. 13.98, find the value of the coupling coefficient k that will make the 10-Ω resistor dissipate 320 W. For this value of k, find the energy stored in the coupled coils at $t = 1.5$ s.

4.
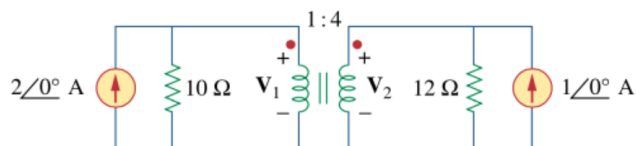
As done in Fig. 13.32, obtain the relationships between terminal voltages and currents for each of the ideal transformers in Fig. 13.105.

(a)

(b)

(c)

(d)
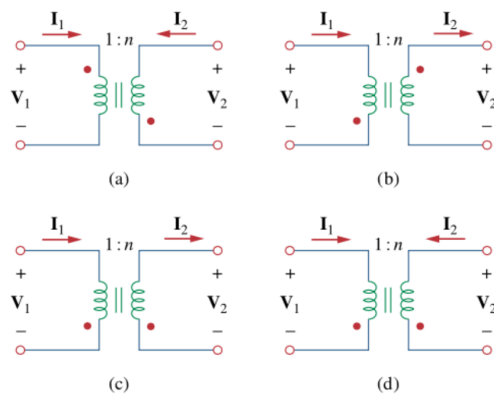
5.

ps ML Obtain V_1 and V_2 in the ideal transformer circuit of Fig. 13.108.

6.