Q1) For the three coupled coils in Fig. 1, calculate the total inductance

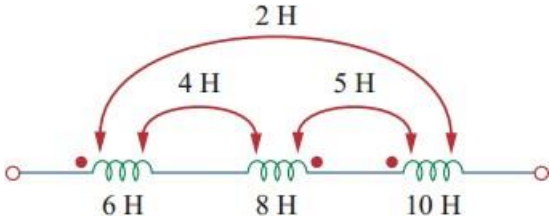


fig.1

Q2) (a) For the coupled coils in Fig. 2(a), show that $\boldsymbol{L_{eq}= L_1+L_2+2M}$

$$L_{\text{eq}} = \frac{L_1L_2 - M^2}{L_1 + L_2 - 2M}$$

(b) For the coupled coils in Fig. 2(b), show

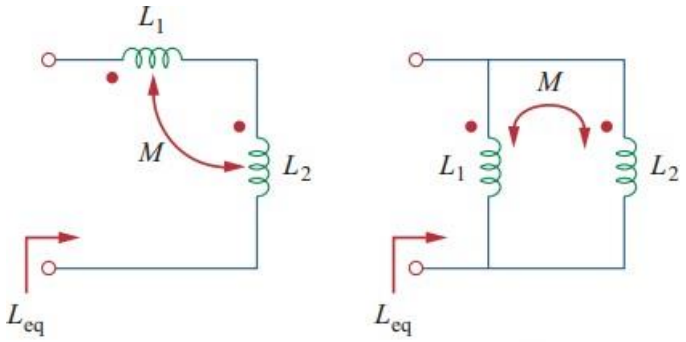


fig.2

Q3) Find current I_o in the circuit of Fig. 3

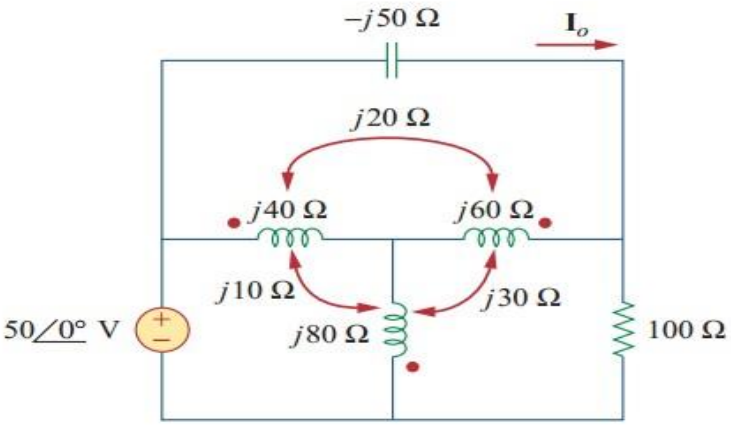


fig.3

Q4) If M=0.2 H and V_s=120 cos10t V in the circuit of Fig. 4, find $i_1$and i_2 Calculate the energy stored in the coupled coils at t=15 ms

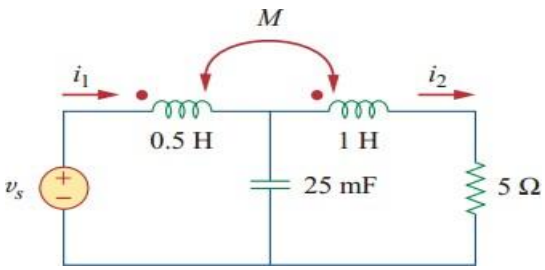


fig.4

Q5) Find currents I_1 ,I_2 and I_3 in the circuit of Fig. 5

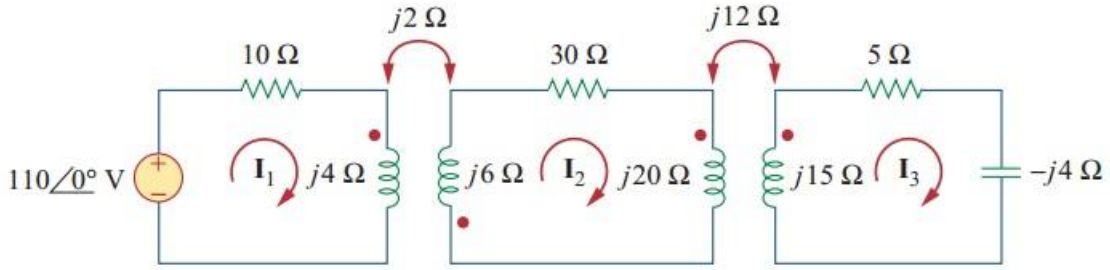


fig.5

Q6) For the circuit in Fig.6, find $\mathbf{I}_1$, $\mathbf{I}_2$, and $\mathbf{V}_o$

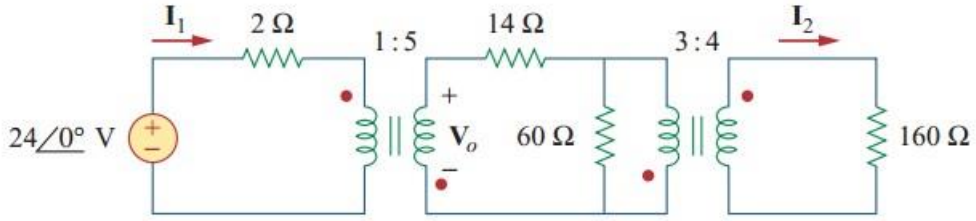
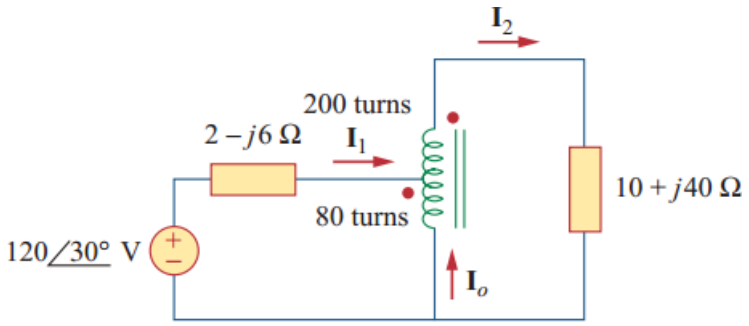


fig.6

Q7) In the ideal autotransformer of Fig. 7, calculate I_1 ,I_2 and I_o Find the average power delivered to the load



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