Chapter 9, Solution 43.

Find current I_o in the circuit shown in Fig. 9.50.
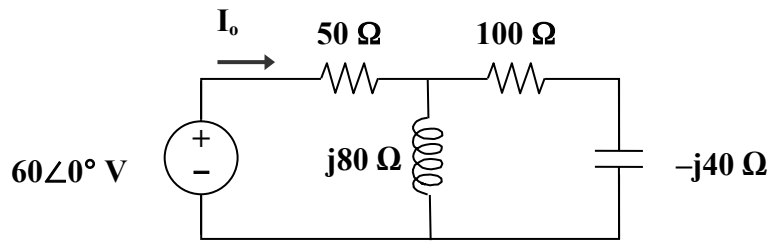

Figure 9.50
For Prob. 9.43.

Solution

$$Z_{in} = 50 + j80 //(100 - j40) = 50 + \frac{j80(100 - j40)}{100 + j40} = 105.71 + j57.93$$

$$I_o = \frac{60 < 0^o}{Z_{in}} = 0.4377 - 0.2411 = \underline{0.4997 < -28.85^o \ A}$$

$$= \textbf{499.7} \angle \textbf{-28.85}° \ \textbf{mA}$$