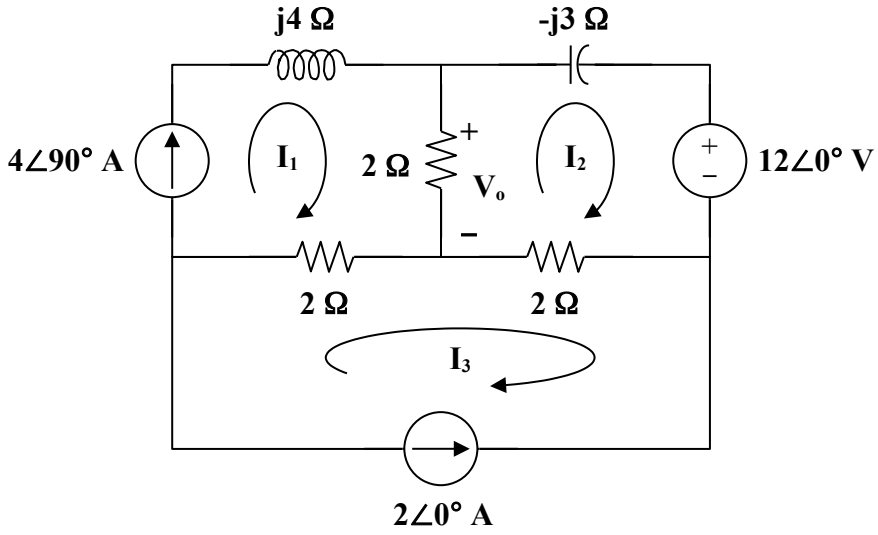
Chapter 10, Solution 36.

Consider the circuit below.



Clearly,

$$\mathbf{I}_1 = 4\angle 90^\circ = j4 \qquad \text{and} \qquad \mathbf{I}_3 = -2$$

For mesh 2,

$$(4 - j3)\mathbf{I}_2 - 2\mathbf{I}_1 - 2\mathbf{I}_3 + 12 = 0$$
$$(4 - j3)\mathbf{I}_2 - j8 + 4 + 12 = 0$$
$$\mathbf{I}_2 = \frac{-16 + j8}{4 - j3} = -3.52 - j0.64$$

Thus,

$$\mathbf{V}_o = 2(\mathbf{I}_1 - \mathbf{I}_2) = (2)(3.52 + j4.64) = 7.04 + j9.28$$

$$\mathbf{V}_o = \mathbf{11.648\angle 52.82^\circ\ V}$$