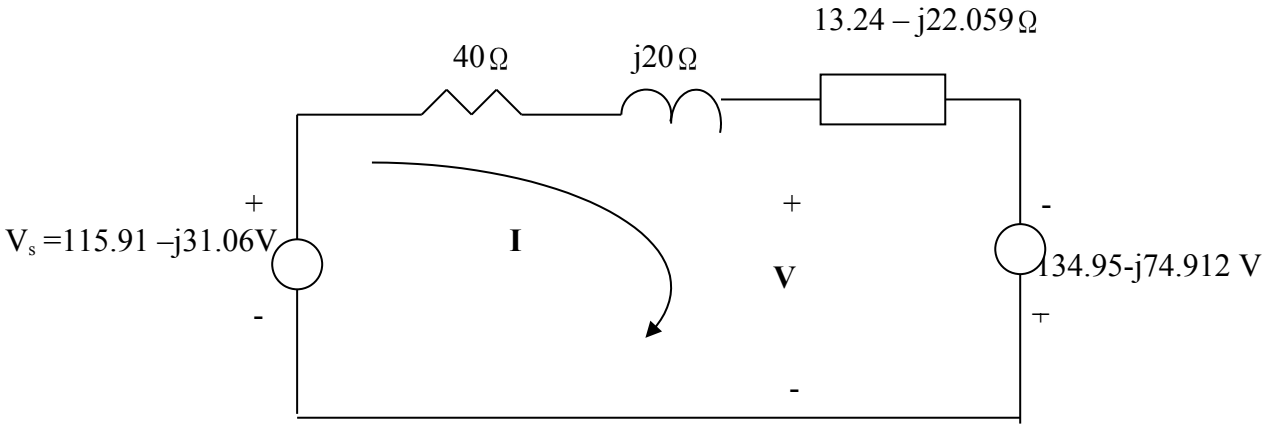
Chapter 10, Solution 54.

$$50 // (-j30) = \frac{50x(-j30)}{50 - j30} = 13.24 - j22.059$$

We convert the current source to voltage source and obtain the circuit below.



Applying KVL gives

-115.91 + j31.058 + (53.24-j2.059)I -134.95 + j74.912 = 0

or $I = \dfrac{-250.86 + j105.97}{53.24 - j2.059} = -4.7817 + j1.8055$

But $-V_s + (40 + j20)I + V = 0 \longrightarrow V = V_s - (40 + j20)I$

$$\boldsymbol{V = 115.91 - j31.05 - (40 + j20)(-4.7817 + j1.8055) = \underline{124.06\angle -154^o \text{ V}}}$$

which agrees with the result in Prob. 10.7.