Problems in Chapter 10

20. Polar-to-rectangular forms

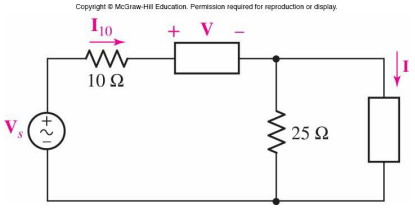
(a) $\frac{2+j3}{1+8\angle 90^\circ} - 4$

(b) $\left(\frac{10\angle 25^\circ}{5\angle -10^\circ} + \frac{3\angle 15^\circ}{3-j5}\right) j2$

(c) $\left(\frac{(1-j)(1+j)+1\angle 0^\circ}{-j}\right) 3\angle -90^\circ + \frac{j}{1\angle -45^\circ}$

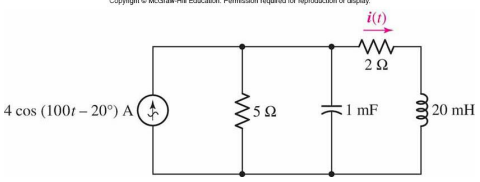
34. Given $\boldsymbol{I}_{10} = 2\angle 42^\circ\ [mA]$,

What is the likely type of element connected to the right of 25 [Ω] resistor?



Problems in Chapter 10

44. Find $i(t)$.



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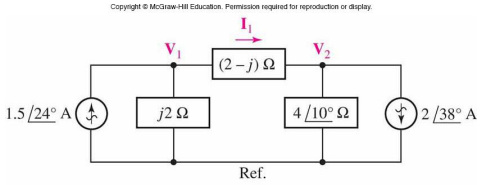
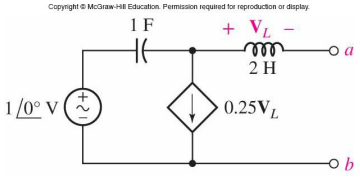
64. Fine the Thevenin equivalent circuit seen from $(2-j)\,[\Omega]$ impedance and find $\boldsymbol{I}_1$.



70. Given $\omega = 1\,[rad/s]$, find the Norton equivalent circuit.



Problems in Chapter 10

72. Let $\boldsymbol{V}_1 = 100\angle 0°\,[V]$, $|\boldsymbol{V}_2| = 140\,[V]$, and $|\boldsymbol{V}_1 + \boldsymbol{V}_2| = 120\,[V]$. Use graphical method to find two possible values for the angle of $\boldsymbol{V}_2$.

75. Given $\boldsymbol{I}_C = 1\angle 0°$, draw a phasor diagram and determine the ratio of $\boldsymbol{V}_2$ to $\boldsymbol{V}_1$.