

69. Determine the power dissipated by the  $1\ \Omega$  resistor in the circuit of Fig. 10.73. Verify your solution with an appropriate LTspice simulation.

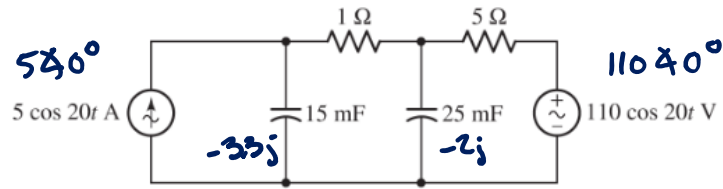
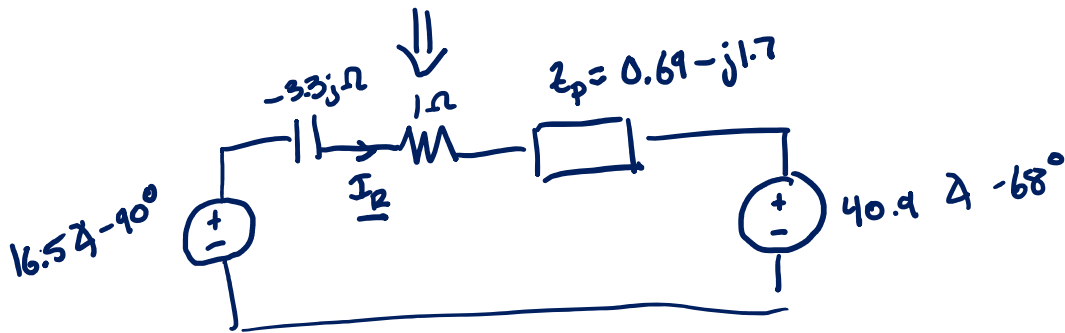
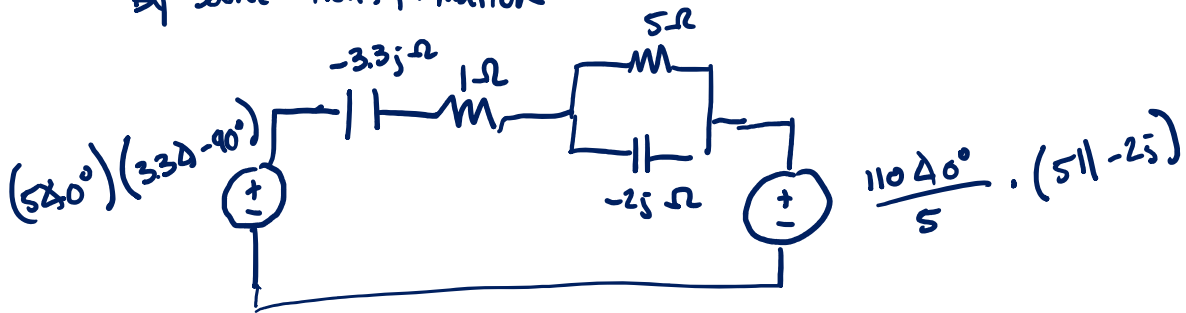


FIGURE 10.73

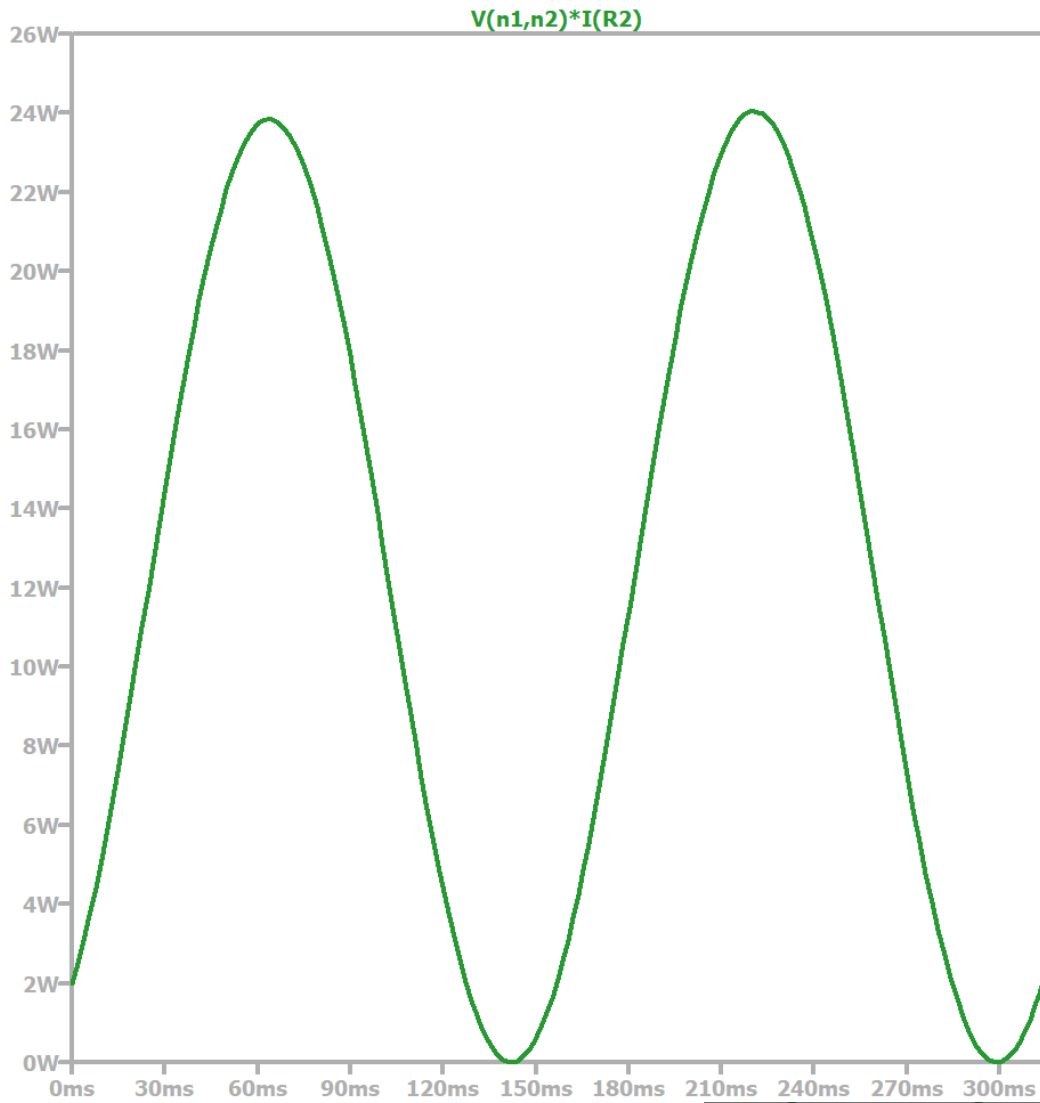
By source transformation



$$\underline{I}_R = \frac{(16.5 \angle -90^\circ - 40.9 \angle -68^\circ)}{1.69 - j5} = 4.95 \angle -163^\circ$$

$$P_R = \frac{|\underline{I}_R|^2 R}{2} = \frac{4.95^2}{2} = 12.27 \text{ W}$$

$$P_R(t) = 12.27 + 12.27 \cos(40t - 326^\circ) \text{ W}$$



Waveform:  $V(n1,n2)*I(R2)$  ✕

Interval Start:	0s
Interval End:	314ms
Average:	11.969W
Integral:	3.7581J

