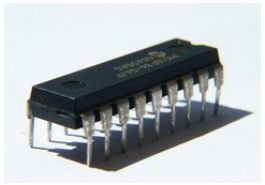


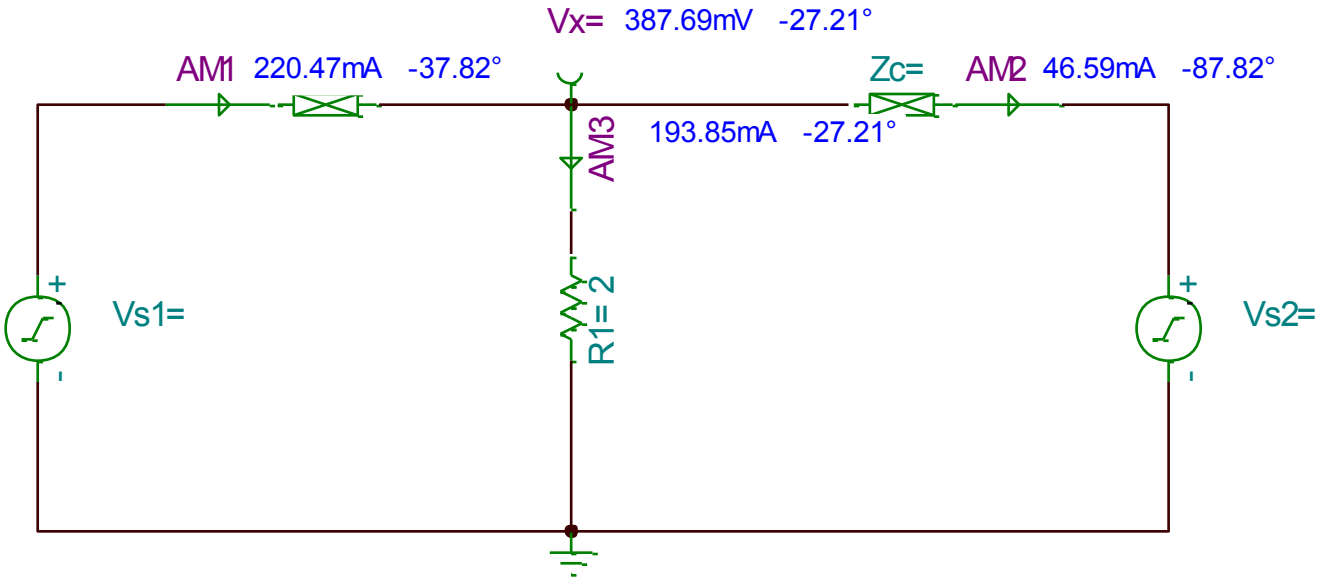
Circuitos Eléctricos II

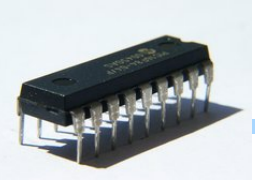


Ejemplos
Capítulo 11

Problema: “PRACTICE” 11.4 página 428

Calcule la potencia promedio de todos los elementos del circuito.





12. Calculate the average power generated by each source and the average power delivered to each impedance in the circuit of Fig. 11.30.

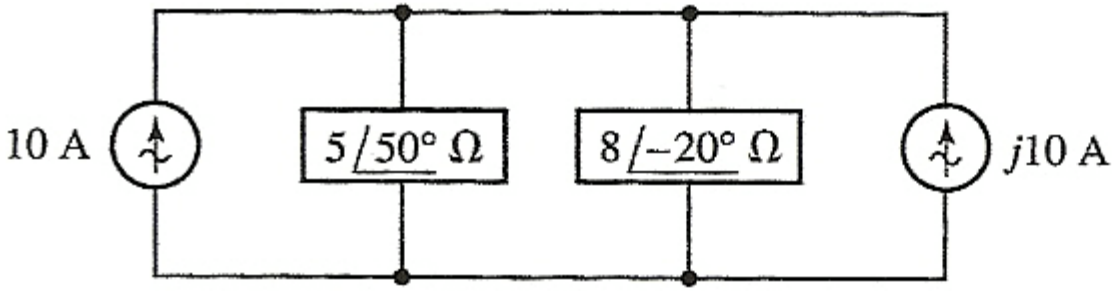


FIGURE 11.30

19. Find the average power supplied by the dependent source of Fig. 11.35.

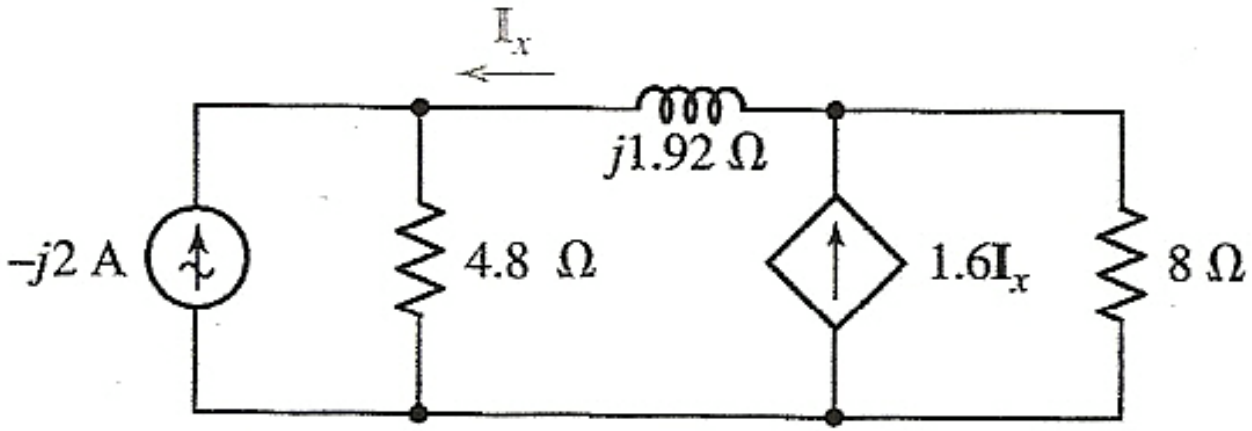
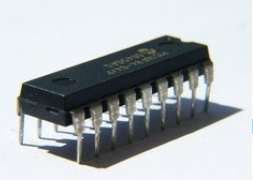


FIGURE 11.35



Ejemplo
Problema 11.45
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45. A composite load consists of three loads connected in parallel. One draws 100 W at a PF of 0.92 lagging, another takes 250 W at a PF of 0.8 lagging, and the third requires 150 W at a unity PF. The parallel load is supplied by a source V_s in series with a 10 Ω resistor. The loads must all operate at 115 V rms. Determine (*a*) the rms current through the source; (*b*) the PF of the composite load.



Ejemplo
Problema 11.46
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46. The load in Fig. 11.50 draws 10 kVA at PF = 0.8 lagging. If $|\mathbf{I}_L| = 40$ A rms, what must be the value of C to cause the source to operate at PF = 0.9 lagging?

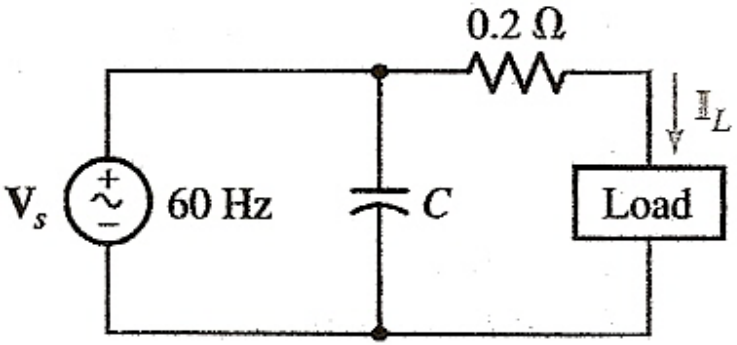

FIGURE 11.50

Ejemplo
Problema 11.48
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48. Analyze the circuit of Fig. 11.52 to find the complex power absorbed by each of the five circuit elements.

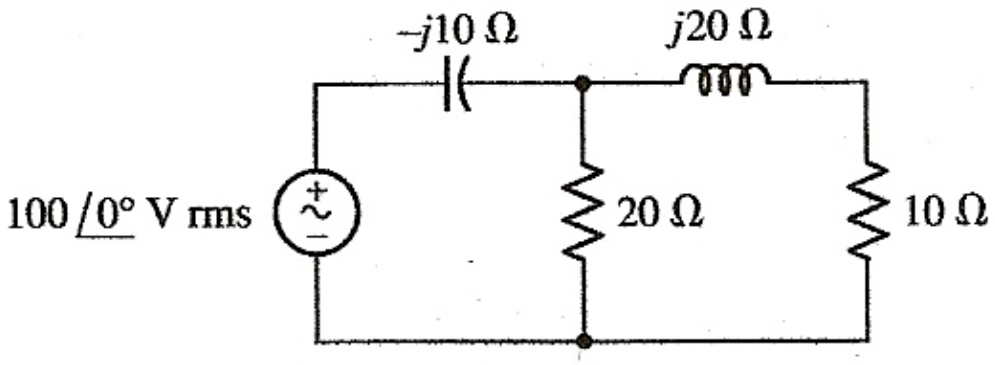

FIGURE 11.52

Ejemplo
Problema 11.49
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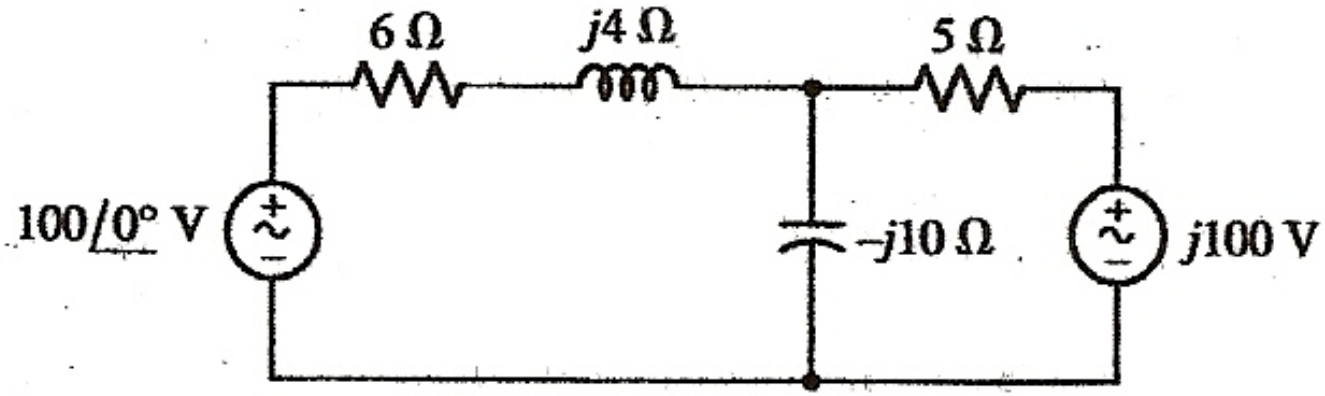
49. Both sources shown in Fig. 11.53 are operating at the same frequency. Find the complex power generated by each source and the complex power absorbed by each passive circuit element.



■ FIGURE 11.53

Ejemplo
Problema 11.51
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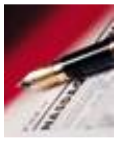
51. A capacitive impedance, $\mathbf{Z}_C = -j120\,\Omega$, is in parallel with a load $\mathbf{Z}_L$. The parallel combination is supplied by a source, $\mathbf{V}_s = 400\underline{/0°}$ V rms, that generates a complex power of $1.6 + j0.5$ kVA. Find the (*a*) complex power delivered to $\mathbf{Z}_L$; (*b*) PF of $\mathbf{Z}_L$; (*c*) PF of the source.



Ejemplo
Problema 11.52
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52. A source of 230 V rms is supplying three loads in parallel: 1.2 kVA at a lagging PF of 0.8, 1.6 kVA at a lagging PF of 0.9, and 900 W at unity PF. Find (*a*) the amplitude of the source current; (*b*) the PF at which the source is operating; (*c*) the complex power being furnished by the source.