Universidad de Puerto Rico
Recinto Universitario de Mayagüez
Departamento de Ingeniería Eléctrica y Computadoras

INEL 3105 Asignacion para parcial #1:

Nombre:_____
Sección:_____

1. ¿Quieres ser ingeniero? ¿Qué eventos y personas en tu vida te convencieron tomar esta decision?

2. Con un amperímetro mides la corriente que fluye por un cable y lees -5A. ¿Qué significa el signo negativo? ¿Cuánta carga fluye por una sección transversal del cable en 3 segundos?
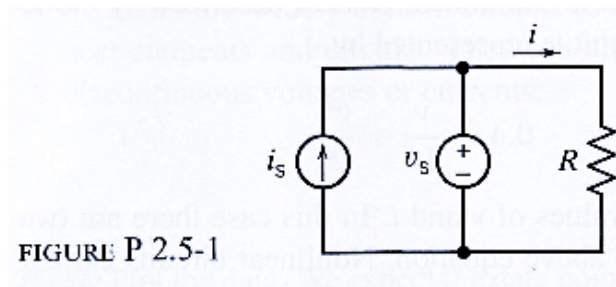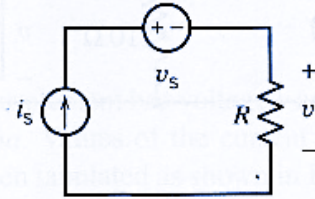


FIGURE P 2.5-1

**P2.5-1 A current source and a voltage source are connected in parallel with a resistor as shown in Figure P2.5-1. All of the elements connected in parallel have**
**the same voltage, $v_s$ in this circuit. Suppose that $v_s = 15$ V, $i_s = 3$ A, and $R = 5\ \Omega$.**
**(a) Calculate the current $i$ in the resistor and the power absorbed by the resistor.**
**(b) Change the current source current to $i_s = 5$ A and recalculate the current, $i$, in**
**the resistor and the power absorbed by the resistor.**

FIGURE P 2.5-2

**P2.5-2** A current source and a voltage source are connected in series with a resistor as shown in Figure P 2.5-2. All of the elements connected in series have the same current, $i_s$, in this circuit. Suppose that $v_s = 10$ V, $i_s = 2$A, and $R = 5 \, \Omega$.
(a)
Calculate the voltage $v$ across the resistor and the power absorbed by the resistor.
(b) Change the voltage source voltage to $v_s = 5$ V and recalculate the voltage, $v$, across the resistor and the power absorbed by the resistor.
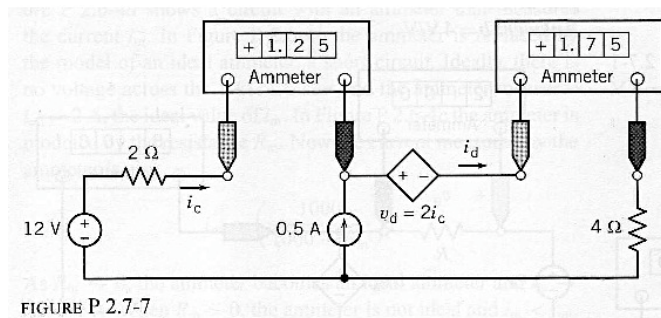


FIGURE P 2.7-7

**P 2.7-7 Find the power absorbed by the CCVS in Figure P 2.7-7.**

3.

**P2.34.** The 9-V source in Figure P2.34 is delivering 27 W of power. All three resistors have the same value $R$. Find the value of $R$.
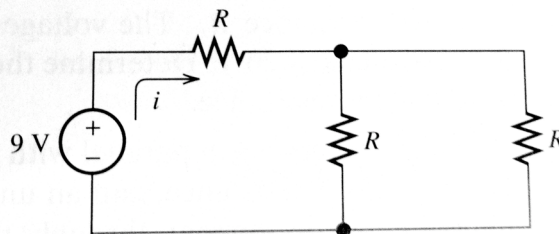


**Figure P2.34**

4.

*P2.47. Write equations and solve for the node voltages shown in Figure P2.47. Then, find the value of $i_1$.
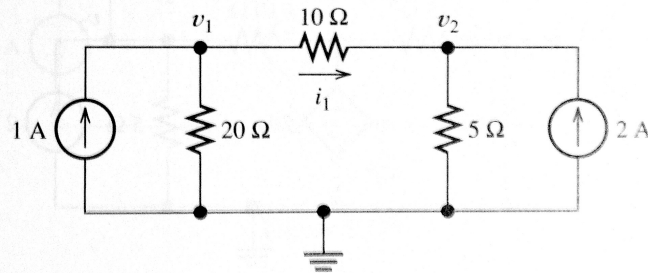


**Figure P2.47**

5.

P2.62. Solve for the power delivered by the voltage source in Figure P2.62, using the mesh-current method.
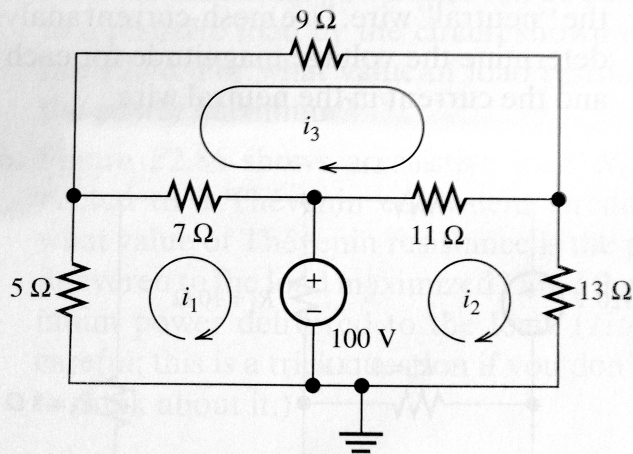


**Figure P2.62**