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

INEL 4075 Asignacion #3: Semana de lunes 12 de septiembre de 2011.

Nombre:_____ Sección:_____

1. Una batería tipo D cuesta $0.50 y es capaz de producir 1.2V a 0.1A durante un intérvalo de 75 horas. Determine el costo energético (en $/kW-hr) y comparalo con el costo energético de tu suplidor de energía electrica local y el costo promedio nacional ($0.12/kW-hr).

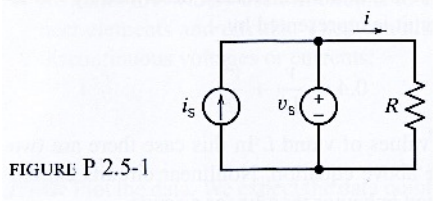

FIGURE P 2.5-1

2. 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 Ω. (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.

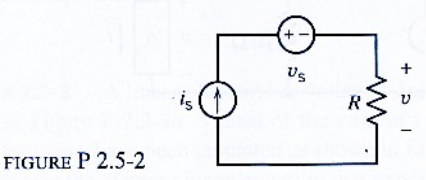

FIGURE P 2.5-2

3. 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 = 2A, and R = 5 Ω. (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.