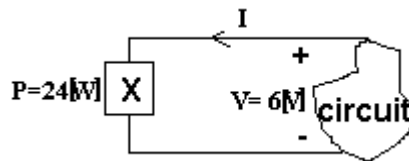


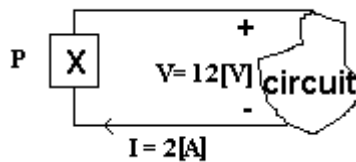
**HOMEWORK #1 - Part 1**

NOTE: Show your works

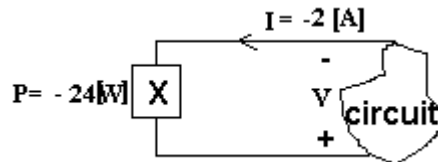
1. Find  $I$  from the circuit below.



2. Find  $P$  from the circuit below.

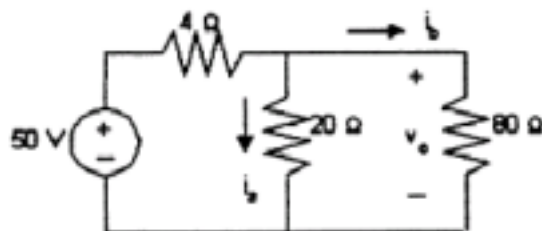


3. Find  $V$  from the circuit below.

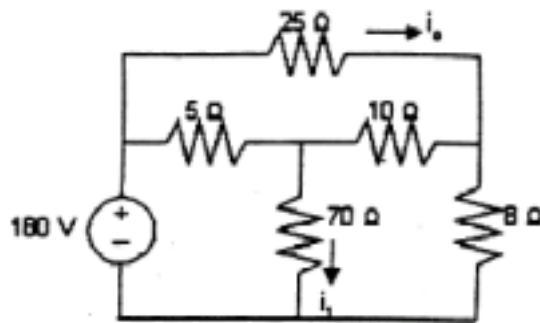


4. Find the power delivered to an element at  $t=3\text{ms}$  if the current entering the positive terminal of the element is  $i = 5 \cos 60\pi t$  and the voltage across the element is:  $v = 3i$ .

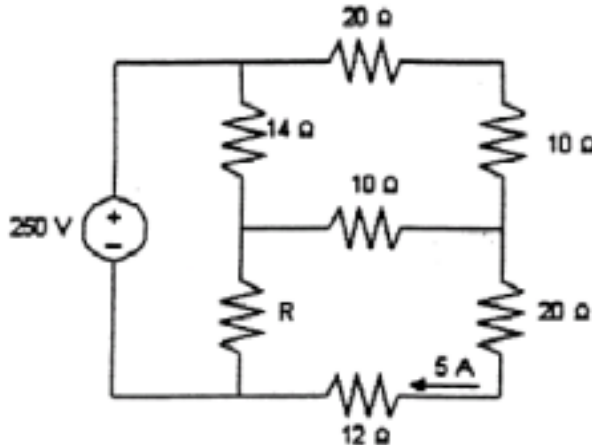
5. : (a) Find the values of  $i_a$ ,  $i_b$ , and  $V_o$ .  
 (b) Find the power consumed by each resistor.



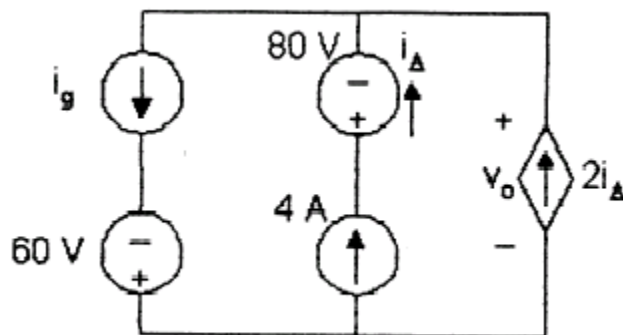
6. In the circuit below, current  $i_0$  is 4[A].  
 (a) Find  $i_1$ .  
 (b) Find the power delivered by the 180 V source.



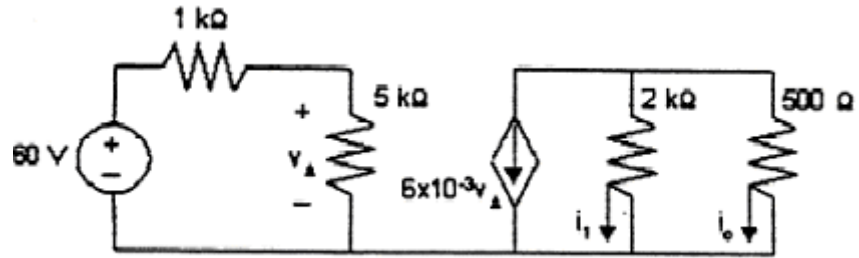
7. (a) Find  $R$  when the current through 12 ohm is 5 [A].  
 (b) Find the power supplied by the 250V Source.



8. Find the powers delivered (or consumed) by all the sources of the circuit if  $V_o=100$  [V]



9. Find  $i_1$  and  $i_0$ .



10. A human body with a voltage difference between one arm and one leg can be figured like figure below (left). Then a simplified model of the situation can be modeled like figure below (right).

(a) Draw a circuit model of the path of current through the human body for a person touching a voltage source of 250 V with both hands who has both feet at the ground terminal of the voltage source. The values of resistance for arm, leg, and trunk are  $400\Omega$ ,  $200\Omega$ , and  $50\Omega$ , respectively.

(b) Calculate the power dissipated in the arm, legs, and trunk.

