EECE202/208   NET1LAB   Dr. Charles J. Kim

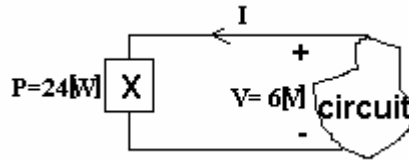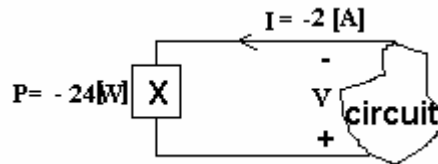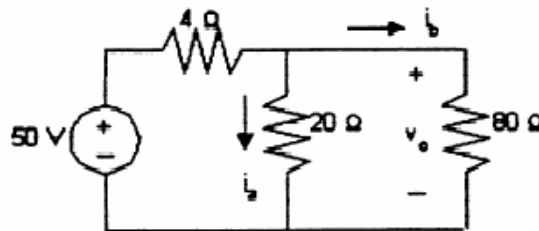## HOMEWORK #1

NOTE: Show your works
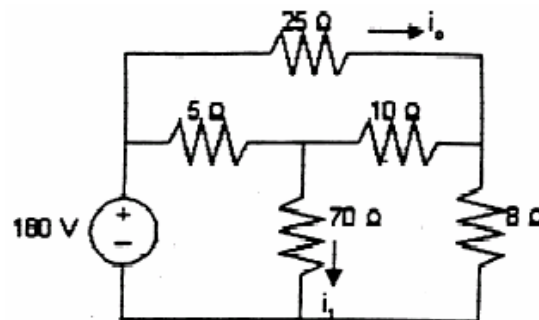
1. Find I from the circuit below.

2. Find V from the circuit below.
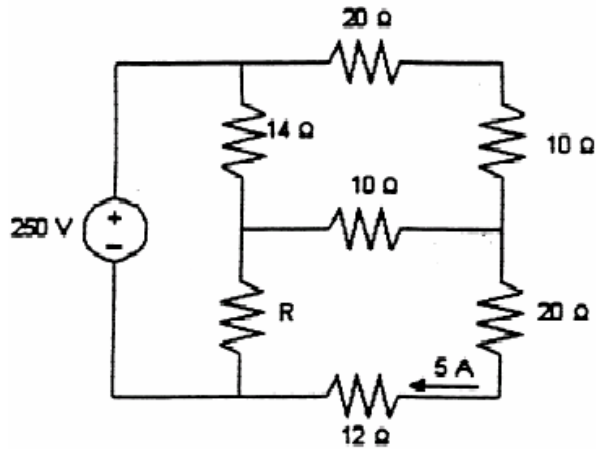

3. : (a) Find the values of i_a, i_b, and V_o.
   (b) Find the power consumed by each resistor.


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

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

6. Find the powers delivered (or consumed) by 4A source and 60V source of the circuit if $V_o=100$ [V] (*Note: Voltage is developed across current sources, dependent or independent. Likewise, current flows through voltage source.)
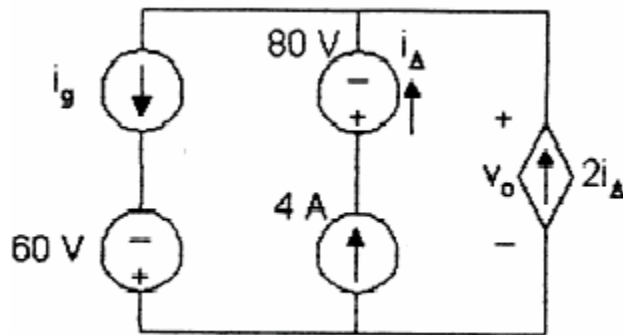
7. Find the current **I** on the circuit shown below.
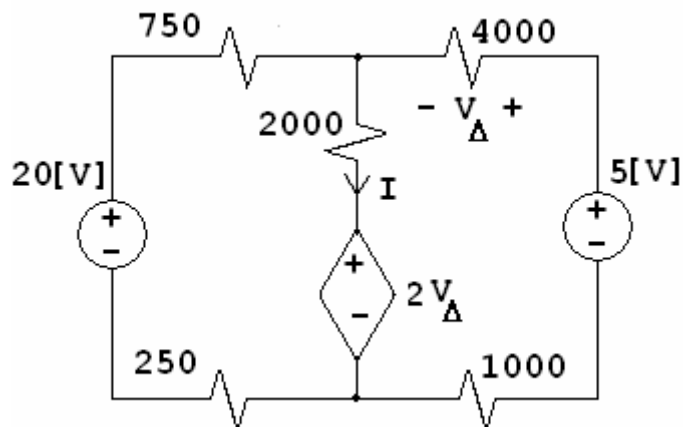
8. Find i_1 and i_0.
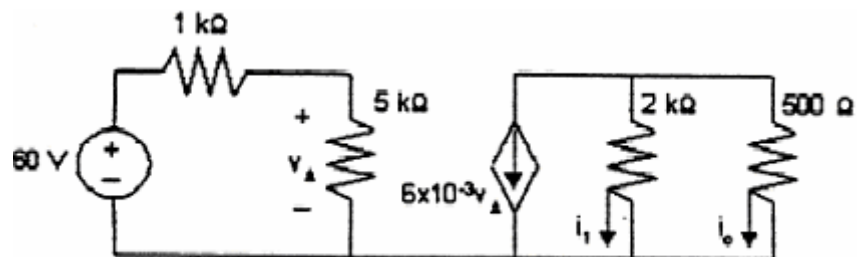
9. An electric sharpener rated 240mW, 6V is connected to a 9V battery in series with a resistor R. Calculate the value of R to properly power the pencil sharpener.

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 12 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 400Ω, 200Ω, and 50Ω, respectively.
(b) Calculate each current flowing in the arm, legs, and trunk.
(c) Is the current level lethal, just sensational, or nothing? (To answer this question, you need some research on the level of current and its impact to human body)