1. (22 pts) Find the values below. Show your work.
   Note: feel free to show answers & work right on the schematic
   a) \( R_4 = ? \)
   b) \( R_3 = ? \)
   c) \( I_S = ? \)

![Circuit Diagram](image)

2. (18 pts) Use the method of superposition to find \( V_{R_2} \) and \( I_{R_3} \).
   Be sure to redraw the circuit as needed and to clearly show and circle your intermediate results.

![Circuit Diagram](image)

3. (24 pts) a) Find and draw the Thévenin equivalent of the circuit shown. The load resistor is \( R_L \).

![Circuit Diagram](image)

b) Find the load current using your Thévenin equivalent circuit.

c) Choose a different value of \( R_L \) so as to maximize the power dissipated in \( R_L \). Find that maximum power.
4. (20 pts) Use nodal analysis to find the readings of the two ideal meters.

You **MUST** show all the steps of nodal analysis work to get credit, including drawing appropriate symbols and labels on the circuit shown.

![Circuit Diagram](image)

5. (10 pts) This circuit has been hooked up for a long time.
Find the voltage across the capacitor and the energy stored in the capacitor.

![Circuit Diagram](image)

6. (6 pts) Find $C_{eq}$ between terminals a and b.

![Circuit Diagram](image)

**Answers**

1. a) 1.76-kΩ  
   b) 890-Ω  
   c) 29-mA

2. $16\cdot V + 20\cdot V = 36\cdot V$  
   $4\cdot mA - 4\cdot mA = 0\cdot mA$

3. a) 500-Ω  
   b) 7.7-mA  
   c) 185-mW  
   d) 19.25-V

4. a) 1.5-V  
   b) 55-mA

5. a) 6.455-V  
   b) 857-mJ

6. a) 3.6-μF  
   b) 3-μF  
   c) 2-μF  
   d) 6-μF