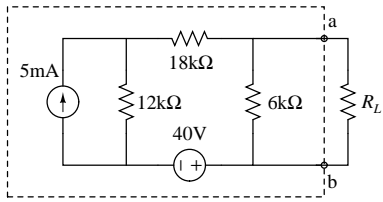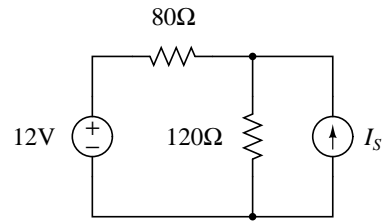## Indian Institute of Technology, Delhi
EEL 101: Fundamentals of Electrical Engineering
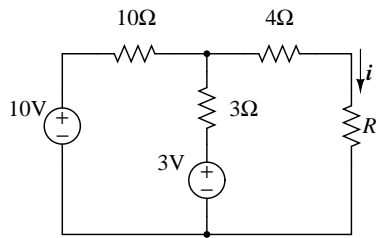## Tutorial 3, 29th January, 2008

1. For the circuit in Fig. (a), replace the circuit in the box by its Thevenin equivalent. Find v_{ab} for $R_L = 3k\Omega$. What value of R_L receives maximum power from the circuit? What value of R_L makes the current in the 6 kΩ resistor to be 0.1 mA?

2. For the circuit in Fig. (b), find I_S such that the current in the 120Ω resistor is zero.

3. Using a Thevenin equivalent circuit, find R in Fig. (c) such that i is 0.5 A.

4. Using node voltage analysis find the voltage across the 20 kΩ resistor in Fig. (d).

5. Solve for i in Fig. (e) using the loop-current method.

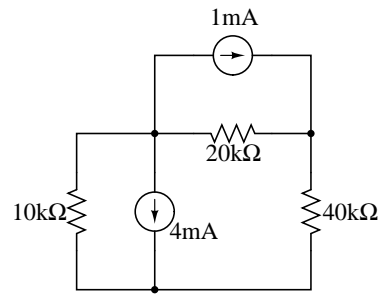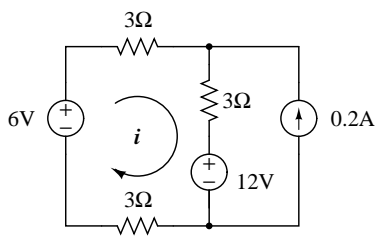6. Find the power in the 100 Ω resistor in Fig. (f) using any method of your choice.
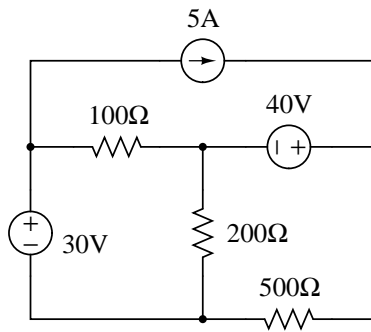
(a)

(b)

(c)

(d)

(e)

(f)