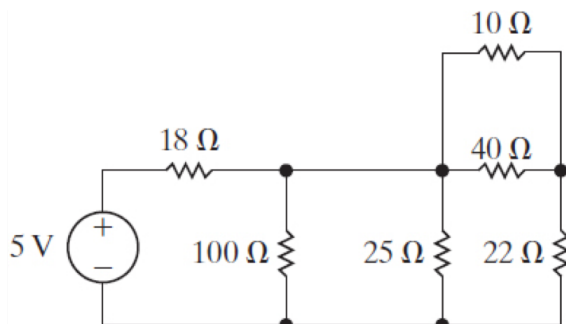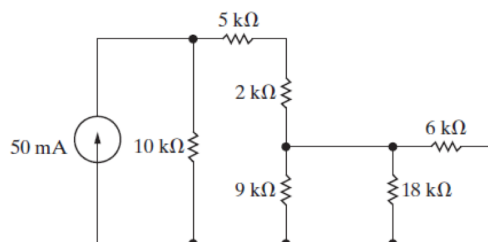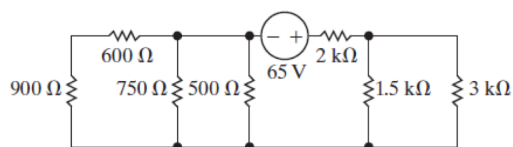## Question 1 [10]

For each of the circuits (a)-(d), find the equivalent resistance and the power delivered by the source.
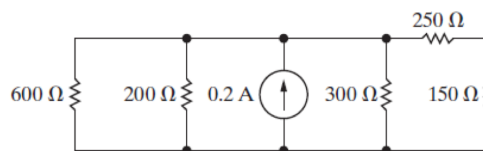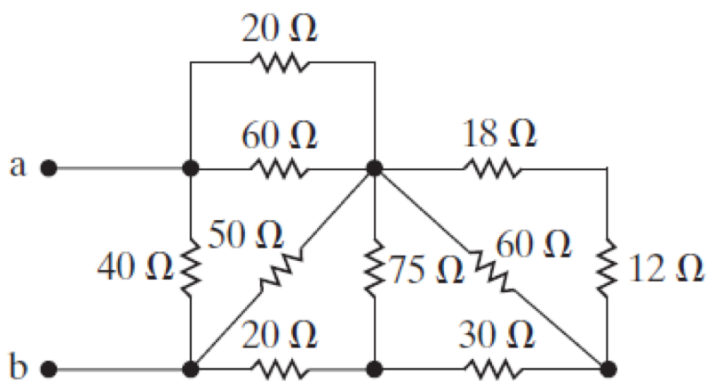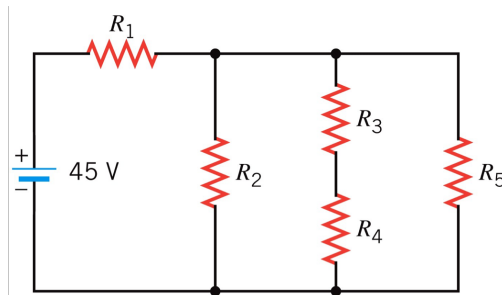

(a)

(b)

(c)

(d)

Question 2 [10]

Find the equivalent resistance R_{ab} for the following circuit.

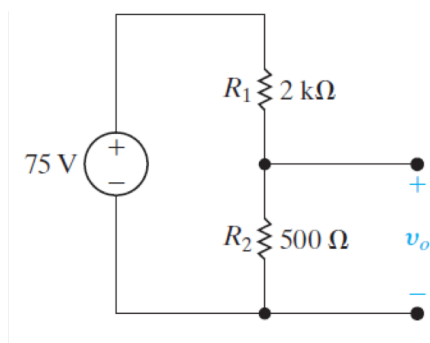## Question 3 [10]

A battery of 45 V delivers 112 W of power to the circuit that contains 5 identical resistors $(R_i=R)$. What is the value of R?

Question 4 [10]

For the voltage-divider circuit shown:

(a) Calculate the no-load voltage v_o.

(b) Calculate the power dissipated in R_1 and R_2.

(c) If only 1 W resistors are available and that the no-load voltage is to be the same as in part (a), specify the smallest values of R_1 and R_2.

Question 5 [10]

Use a Δ-to-$\mathbf{Y}$ transformation to find the voltages v_1 and v_2 int he circuit below.