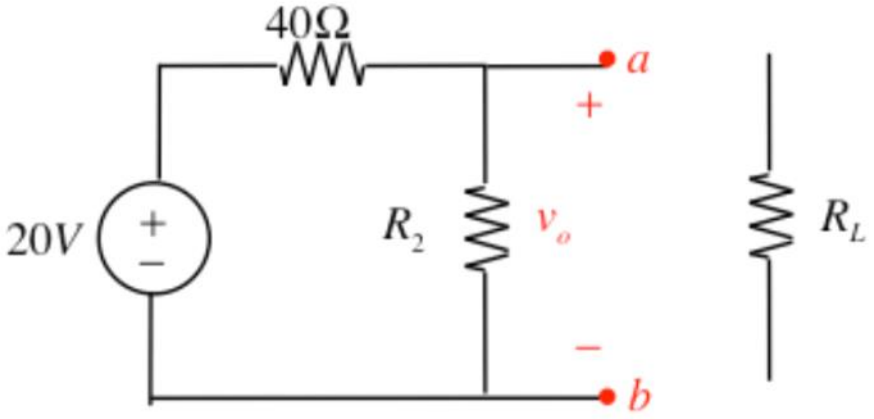
Exercise 3, Question 1

(discussion problem 2, Question 2)

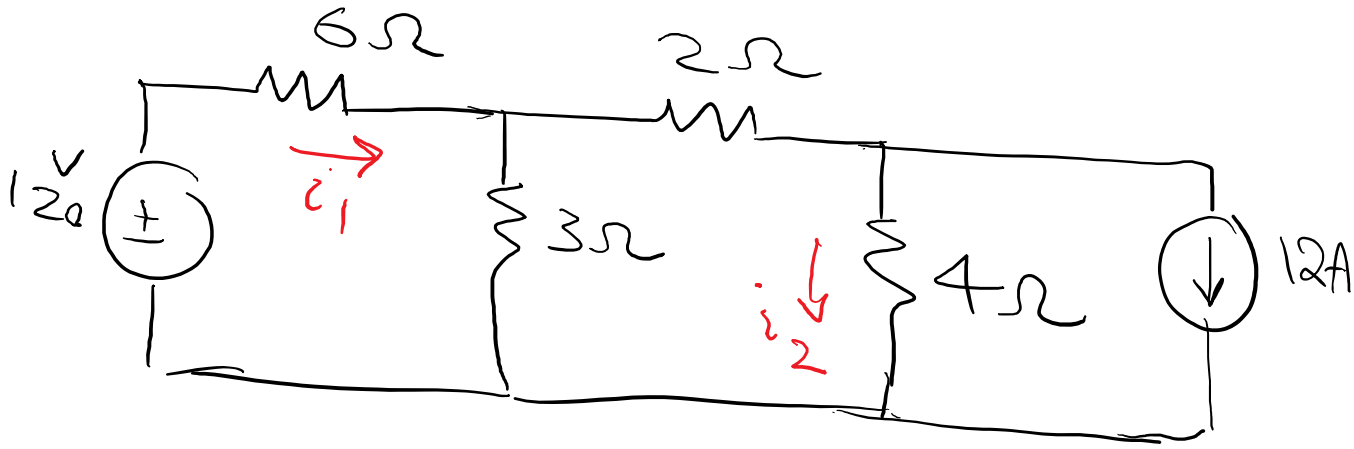
In the voltage-divider circuit shown, the no-load value of v0 is 4v. When the load resistance RL is attached across the terminals a and b , v0 drops to 3v.

- Find the value of $R2$
- Find the value of RL



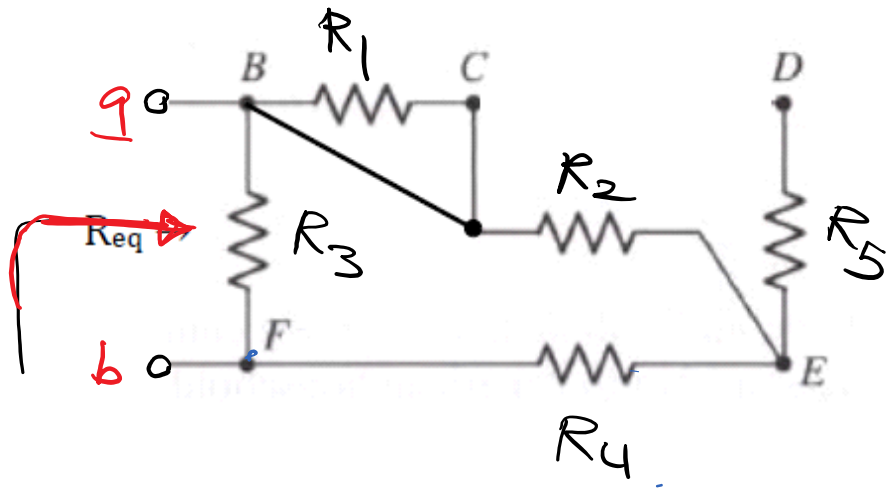
Exercise 3, Question 2

Use Superposition to find i1 and i2.



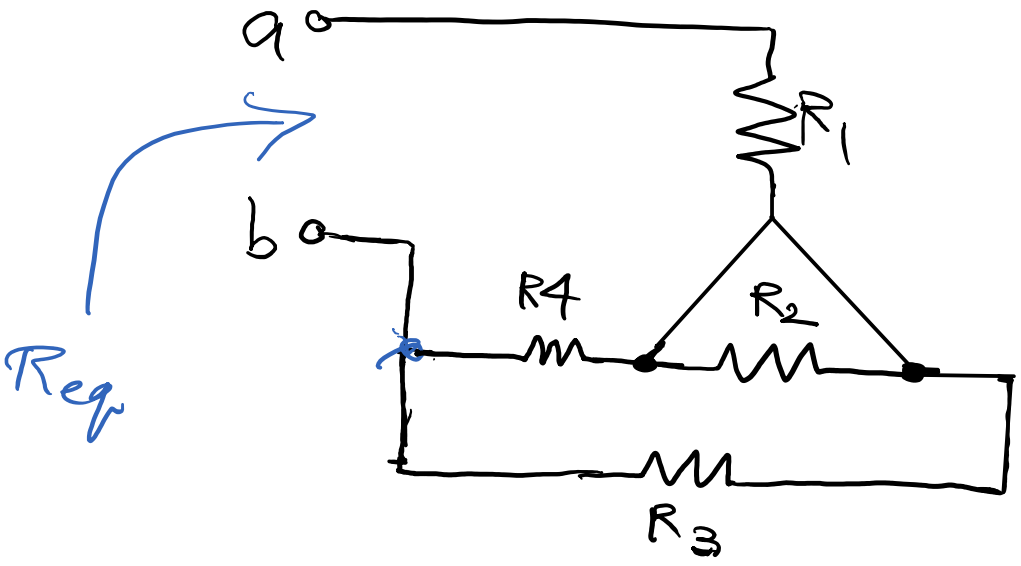
Exercise 3, Question 3a

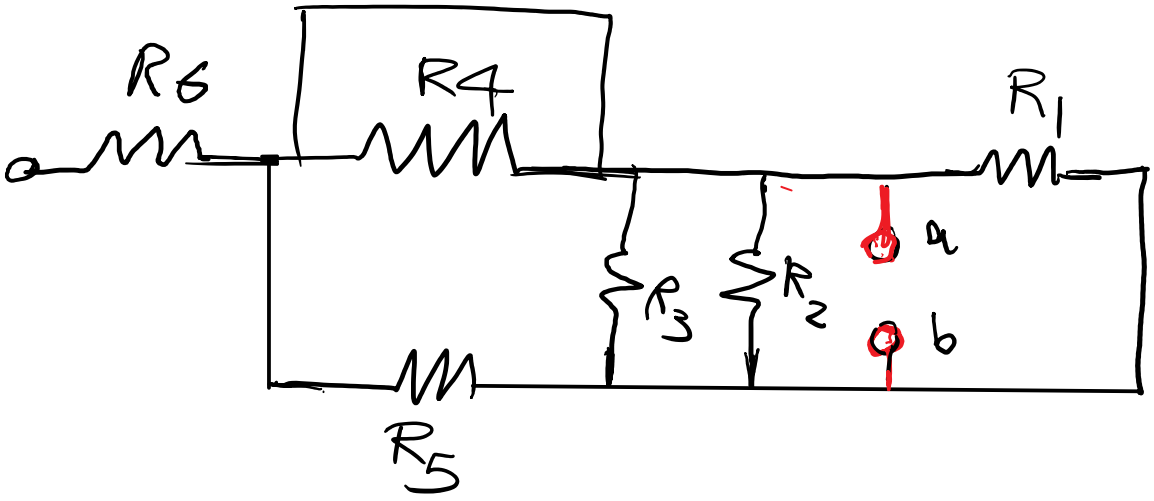
Find Req



Exercise 3, Question 3b, 3c

Find Req seen from terminals a and b.





Exercise 3, Question 4

a) Use Kirchhoff's laws and Ohm's law to find the voltage v_o as shown in Fig. 2.23.

b) Show that your solution is consistent with the constraint that the total power developed in the circuit equals the total power dissipated.