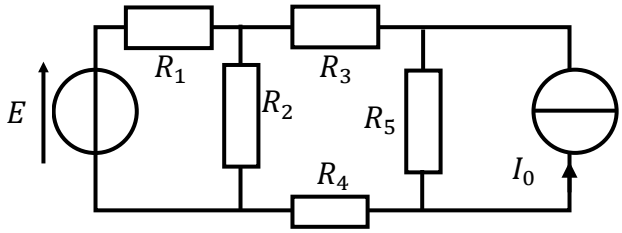
Tutorial 0: Revision

Exercise 1

Consider the network opposite. We have

- $E = 10V, I_0 = 10mA$
- $R_1 = 1k\Omega, \quad R_2 = 1{,}2k\Omega, \quad R_3 = 500\Omega,$ $R_4 = 1{,}5\ k\Omega, R_5 = 2k\Omega$

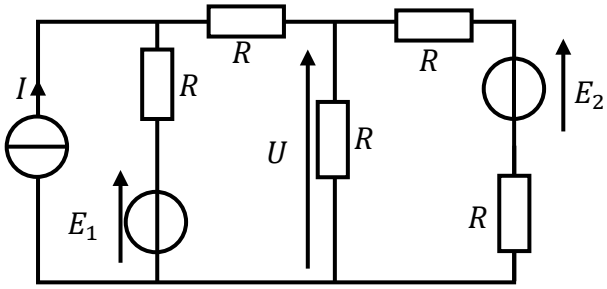


Determine the Thévenin generator seen by $R2$. You will use the method of your choice (Equivalences or application of the theorem), and you will express your result as a function of $I0$, E and resistances.
Deduce the voltage across $R2$

Exercise 2

Consider the circuit opposite.

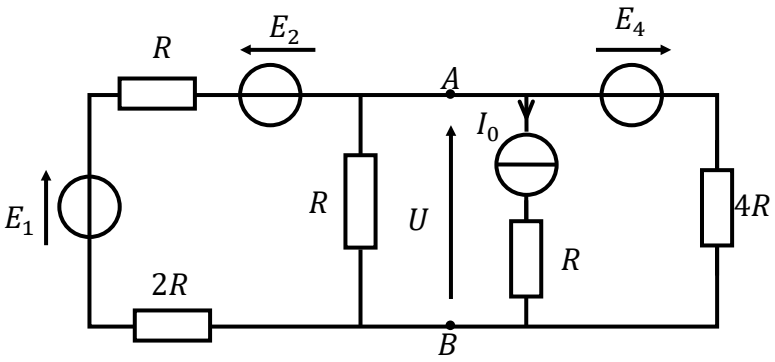
E1, $E2$, I and R are assumed to be known, and the generators are independent. Determine the expression of the voltage U using the method which seems most appropriate to you (Kirchhoff's laws, superposition, Thévenin, Norton or Millman theorem), indicating it beforehand.



Exercise 3

Consider the network opposite.

Determine the expression of the voltage U using the method that seems the most appropriate (Kirchhoff's laws, superposition theorem, Thévenin, Norton or Millman theorem), indicating it beforehand. You will express U as a function of $E1$, $E2$, $E4$, $I0$ and resistances R.



Exercise 4

Consider the network opposite.
Determine U.