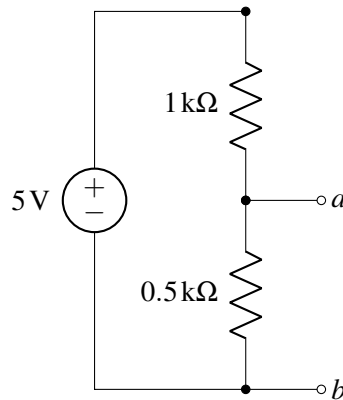


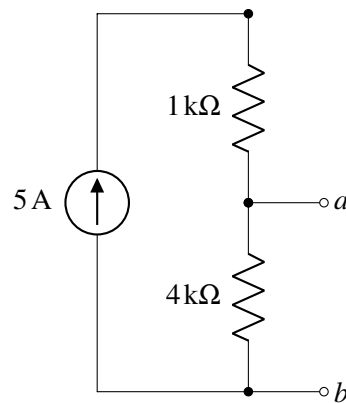
1. Equivalence

Find the Thévenin and Norton equivalents across terminals a and b for the circuits given below.

(a)

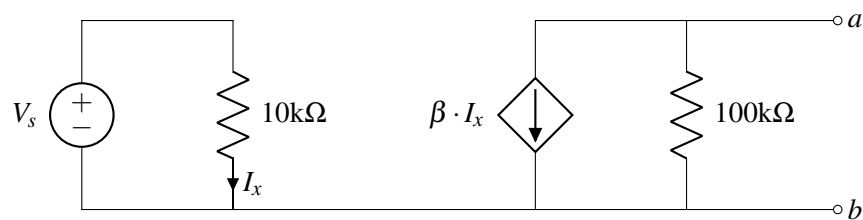


(b)



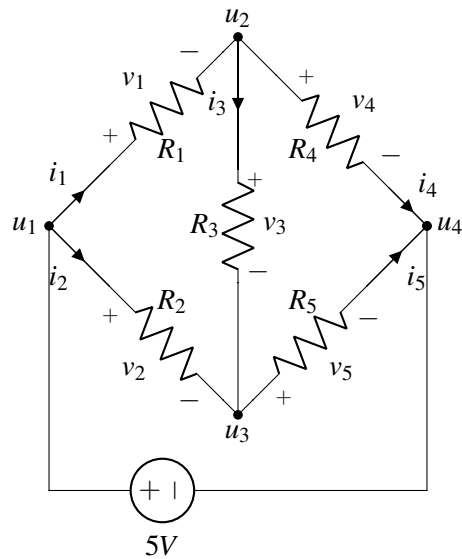
2. Equivalence

Find the Norton equivalent of the following circuit across the terminals a and b (in terms of V_s and β). Note that the current source is dependent on the current I_x .



3. Wheatstone Bridge

Let us revisit our favorite circuit, the wheatstone bridge. Thévenin equivalence is an alternative technique we can use to solve the bridge circuit. For the circuit below, $R_1 = 4\text{ k}\Omega$, $R_2 = 1\text{ k}\Omega$, $R_3 = 3\text{ k}\Omega$, $R_4 = 1\text{ k}\Omega$, and $R_5 = 4\text{ k}\Omega$.



- First, let's remove the bridge resistor. Calculate the Thévenin equivalence between the two terminals of the resistor u_2 and u_3 .
- With this equivalent circuit, calculate the current through the bridge resistor.