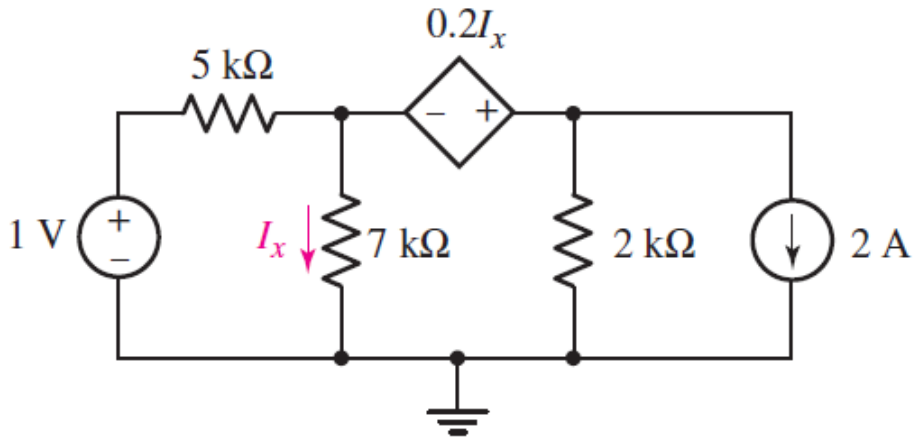
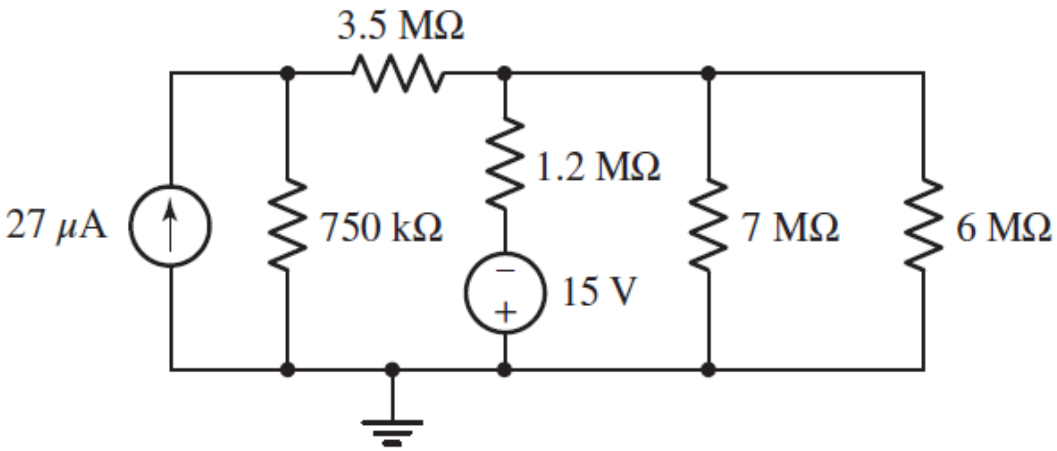
Exercises 05
-
Superposition and Source Transformation

Exercise 1 - Superposition



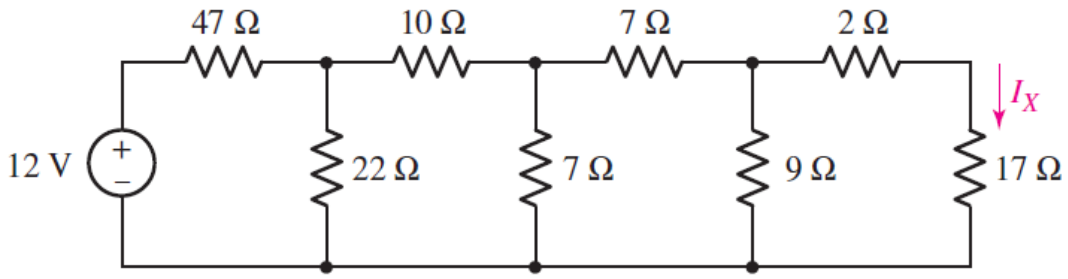
Employ superposition principles to obtain a value for the current I_x.

Exercise 2 - Source Transformations



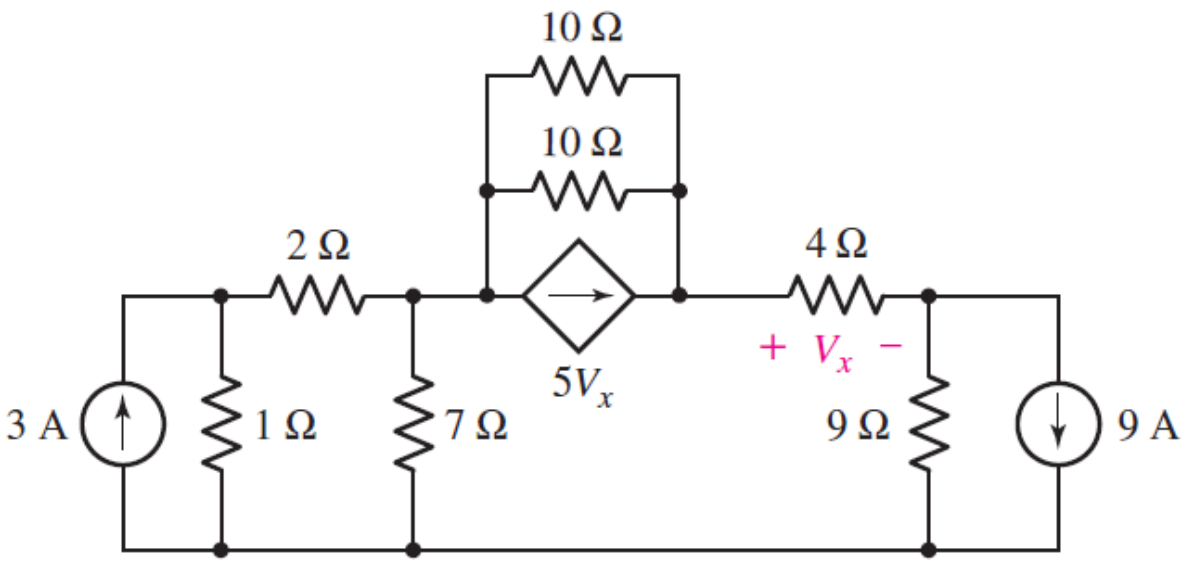
Using repeated source transformation, reduce the circuit to a voltage sources in series with a resistor.

Exercise 3 - Source Transformations



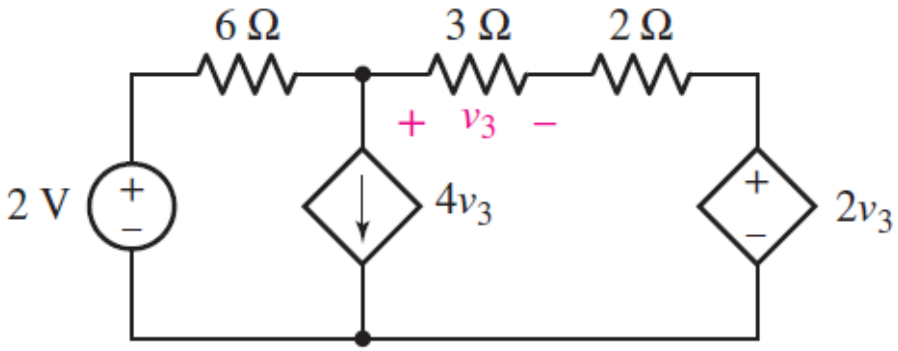
Making use of repeated source transformations, reduce the circuit such that it contains a single voltage source, the 17 Ω resistor, and one other resistor.
Calculate the power dissipated by the 17 Ω resistor.

Exercise 4 - Source Transformations



First convert all three sources to voltage sources, then simplify the circuit as much as possible and calculate the voltage V_x.

Exercise 5 - Source Transformations



First transform both voltage sources to current sources and reduce the number of elements as much as possible, and determine the voltage v_3.