

Guidelines for Labeling Element Variables

Some element voltages and currents will be labeled as part of the problem statement. For example, an input variable and an output variable will probably be labeled.

Meters:

Replace each (ideal) ammeter by a short circuit. Label the current in the short circuit to be equal to the ammeter current.

Replace each (ideal) voltmeter by an open circuit. Label the voltage across the open circuit to be equal to the voltmeter voltage.

Resistors:

Label the voltage and current of each resistor to adhere to the passive convention.

Series and Parallel Elements:

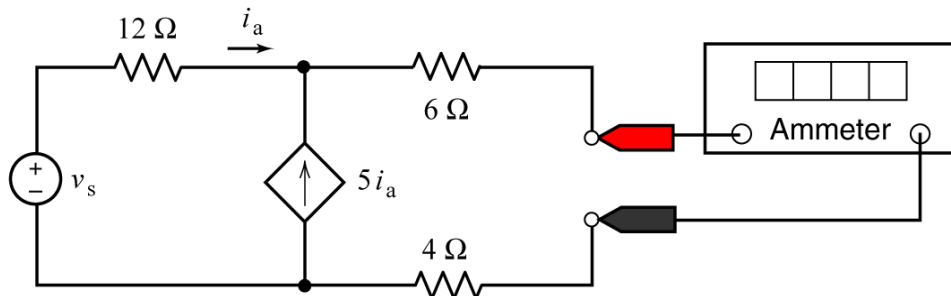
Label series elements so that their currents are equal. Label parallel elements so that their voltages are equal.

The rest:

Label the remaining currents and voltage as convenient. Reference directions will be arbitrary.

Problem 1

Suppose $v_s = 18 \text{ V}$. Determine the value of the current measured by the ammeter in this circuit:



Problem 2

Suppose $v_s = 15 \text{ V}$. Determine the value of the voltage measured by the voltmeter in this circuit:

