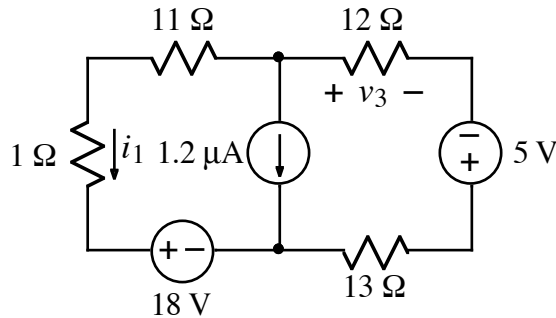


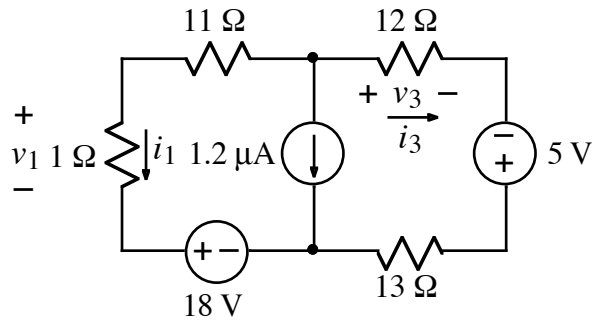


Ex:

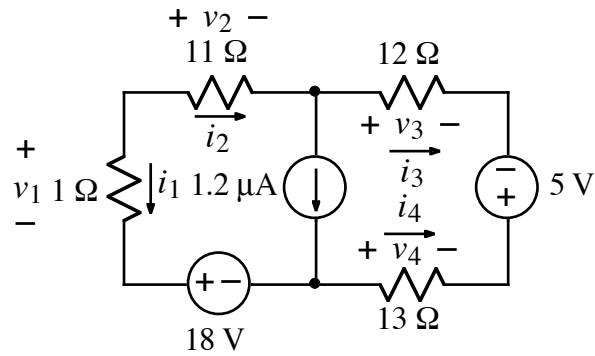


Using the passive sign convention, complete the labeling of all currents and voltages for the resistors in the above circuit.

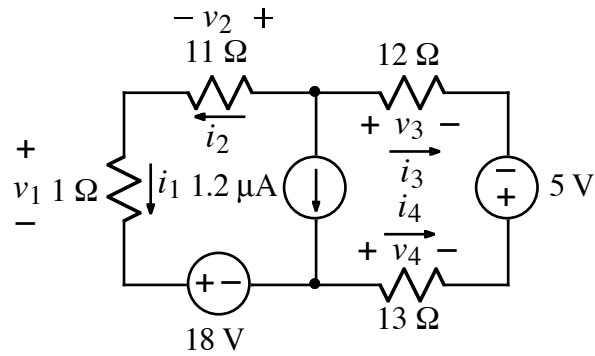
SOL'N: For resistors that already have one label for voltage or current, we must follow the passive sign convention with the other label. That is, the arrow indicating the direction of the current measurement must point to the minus sign of the voltage measurement. This yields the results shown below.



For the remaining two resistors, we may choose one of two directions for the voltage measurement. Once the voltage measurement direction is chosen, the arrow for the current measurement must point to the minus sign of the voltage measurement. That means that there are several correct answers to this problem. The diagrams below show two ways we could label the 11 Ω resistor.



and



Likewise, we have two choices for the direction of labeling the 12 Ω resistor. If we chose the other direction for the labels, we could generate two more correct diagrams.