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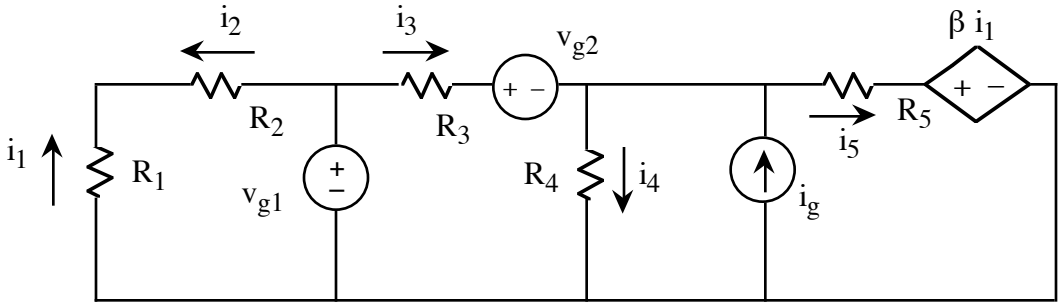
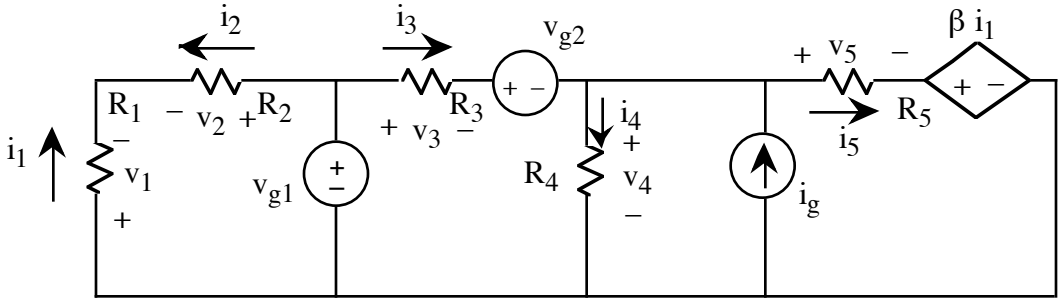
EX: In the circuit below, the currents in each element are labeled as shown. Using the passive sign convention, label the potential difference across each element and show its polarity.



ANS:



(Any labeling with current measurement arrows pointing from + signs to - signs of voltage measurements is valid.)

SOL'N: The passive sign convention dictates that the current measurement arrow always points away from the + sign and toward the - sign of the voltage measurement. Note that the current arrow and + and - sign for voltage indicate only the Polarity Of current and voltage Measurements—NOT the direction of the physical flow of current or the sign of the actual voltage. In other words, the arrows and + and - sign tell us how to connect the leads of a multimeter to make a measurement. We do not know, (nor do we have to know), in advance which direction current is flowing or what the actual sign of the voltage will be.