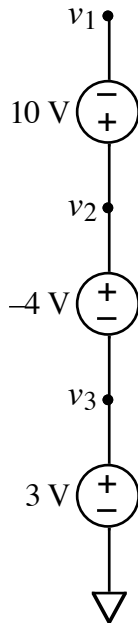**Ex:**

Find the absolute voltages at all the labeled nodes in the above circuit. Hint: start at the bottom and work upwards.

SOL'N: Starting at the reference, which is 0 V, we work our way upwards. If we enter a source at the – sign, we add the voltage of the source. Otherwise, we subtract the voltage of the source.

$$v_3 = 3 \text{ V}$$

$$v_2 = v_3 + -4 \text{ V} = 3 \text{ V} + -4 \text{ V} = -1 \text{ V}$$

$$v_1 = v_2 - 10 \text{ V} = -1 \text{ V} - 10 \text{ V} = -11 \text{ V}$$