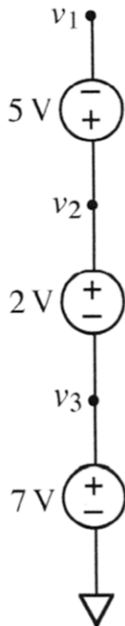


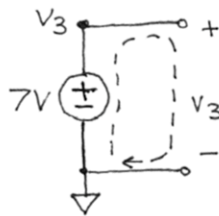
Ex:



Find the absolute voltages at all the labeled nodes in the above circuit.

SOL'N:

We may imagine v-loops in which we measure across gaps. For the 7V source, for example, we have the following view:



For the above v-loop, we have the following eq'n:

$$+7V - v_3 = 0V \quad \text{or} \quad v_3 = 7V$$

Thus, the value of  $v_3$  is 7V higher than the reference voltage of 0V.

Each source adds its value to the node below it. If the voltage source is reversed (plus on the bottom) we subtract its value from the node below.

$$V_2 = V_3 + 2V = 7V + 2V = 9V$$

$$V_1 = V_2 - 5V = 9V - 5V = 4V$$