Ex:

For the circuit shown, write three independent equations for the node-voltages, $v_1$, $v_2$, and $v_3$. The quantity $v_x$ must not appear in the equations. Make at least one consistency check (other than a units check) on your expression. In other words, choose component values that make the values of $v_1$, $v_2$, and $v_3$ obvious, and verify that your three equations are satisfied by these values. Specify your consistency check by listing a numerical value for every source and resistor.
From eq. from (a)

1. \( V_1 - V_3 = 0 \left[ \frac{(V_3 - V_2)}{2} \right] \Rightarrow V_1 = V_3 = 1V \)

2. \( 0 + \frac{V_1}{\infty} + \frac{V_3 - 0}{1} - 1 + \frac{V_3 - V_2}{1} - \frac{(V_2 - V_3)}{\infty} = 0 \)

   \( V_3 = 1 + V_3 - V_2 = 0 \Rightarrow 2V_3 - V_2 = 1 \)

   \( 2V_3 - V_2 = 1 \)

   \( V_3 = 1V \)

3. \( 0 + \frac{(V_2 - V_3)}{\infty} + - \frac{(V_3 - V_2)}{1} = 0 \)

   \( V_3 = V_2 = 1V \)