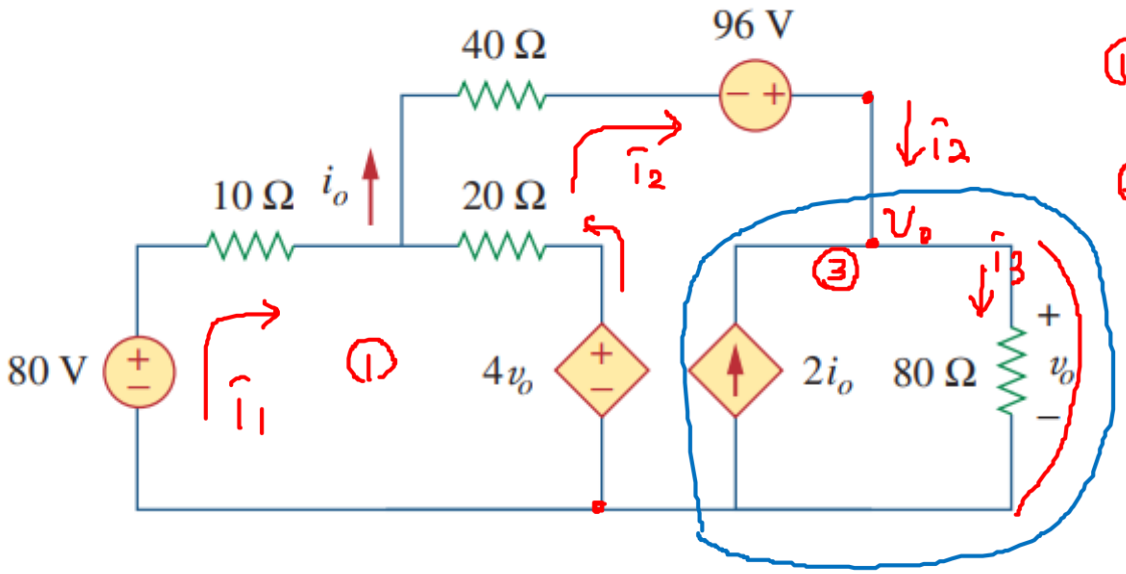
Find v_o and i_o in the circuit below using nodal and mesh analysis.



① $-80 + 10i_1 + 20(i_1 - i_2) + 4V_o = 0$

② $-4V_o + 20(i_2 - i_1) + 40i_2 - 96 + V_o = 0$

③ KCL: $i_3 = i_2 + 2i_o$

$V_o = 80 \times i_3 = 80(i_2 + 2i_o)$

$i_2 = i_o$

$V_o = 80 \times 3i_2$

$30i_1 + 940i_2 = 80$

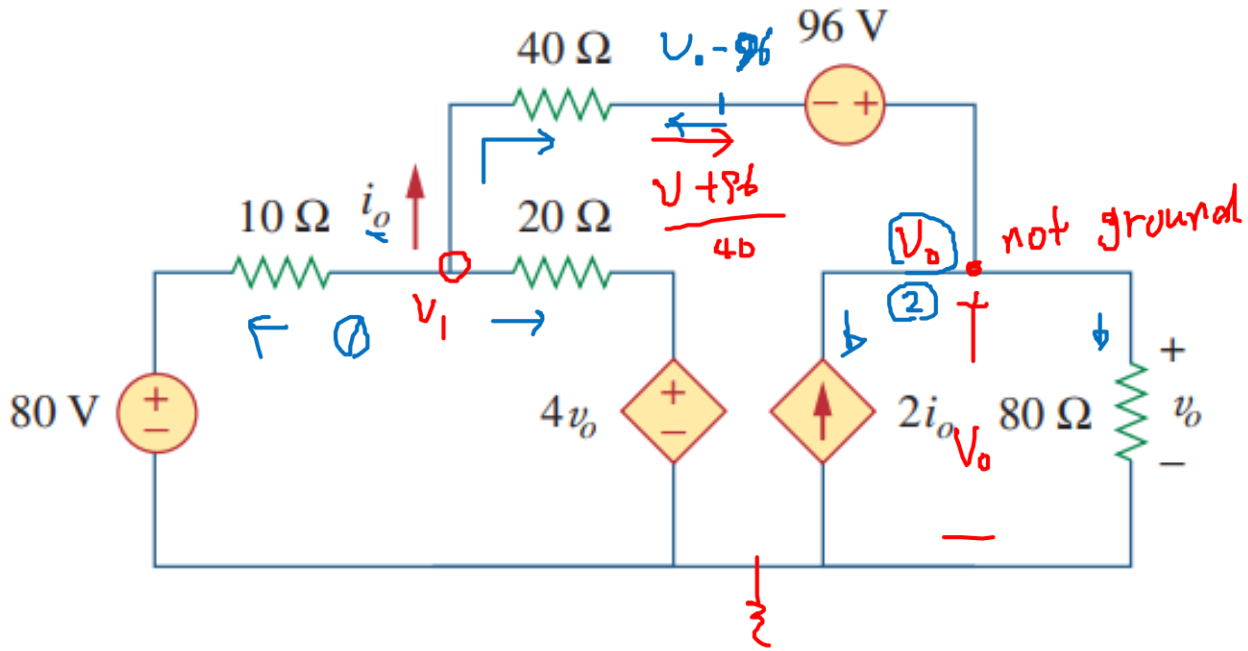
$-30i_1 - 660i_2 = 96$

$i_1 = 143.04$ A

$i_2 = -4.48$ A

$V_o = -1075.2$ V

Find v_o and i_o in the circuit below using nodal and mesh analysis.



① $\frac{v_1 - 80}{10} + \frac{v_1 - 4v_o}{20} + \frac{v_1 - (v_o - 96)}{40} = 0$

② $-2i_o + \frac{v_o}{80} + \frac{v_o - 96 - v_1}{40} = 0$

③ $\frac{v_1 - (v_o - 96)}{40} = i_o$