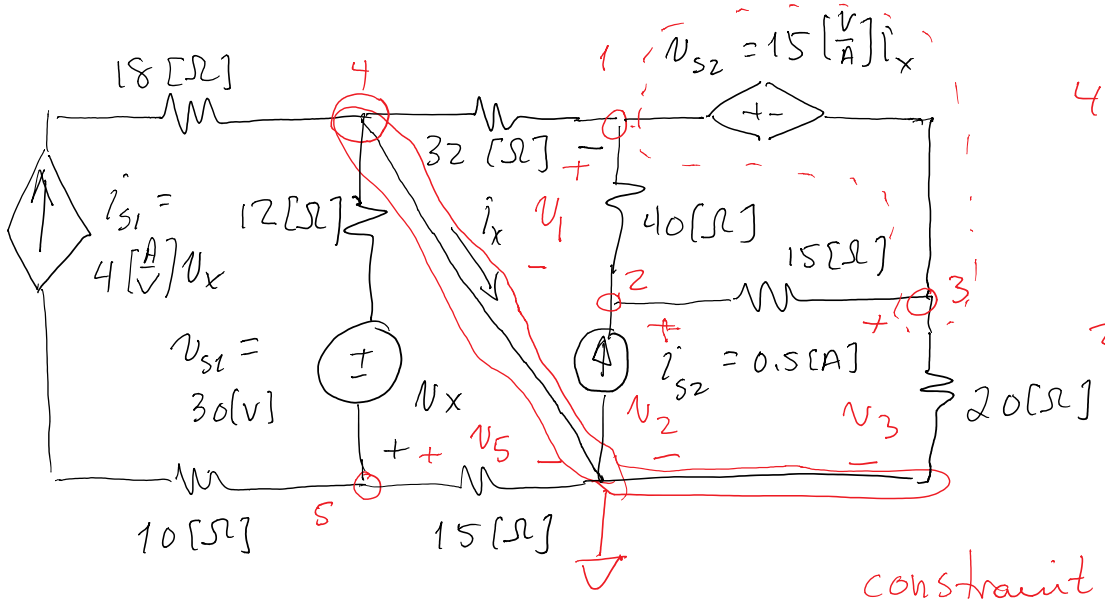
NVM 2



4 NV Eqns
1 SN Eqn
1 constraint
2 req NV Eqns
2 auxiliary

constraint

$$v_1 - v_3 = 15\left[\frac{V}{A}\right] i_x$$

v_x :

$$v_x + v_1 - v_5 = 0$$

⑤ $$4\left[\frac{A}{V}\right] v_x + \frac{v_5}{15} + \frac{v_5 + 30}{12} = 0$$

② $$\frac{v_2 - v_3}{15} - 0.5\,[A] + \frac{v_2 - v_1}{40} = 0$$

SN ① ② ⑤ $$\frac{v_1}{32} + \frac{v_1 - v_2}{40} + \frac{v_3}{20} + \frac{v_3 - v_2}{15} = 0$$

i_x : $$-4\left[\frac{A}{V}\right] v_x - \frac{v_1}{32} + i_x - \frac{v_5 + 30}{12} = 0 \quad // \quad -i_x - \frac{v_5}{15} - \frac{v_3}{20} + 0.5\,[A] = 0$$