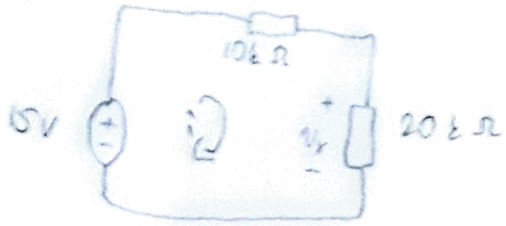
Hüseyin Kerem Mican 150119629 Hw1

Q1)

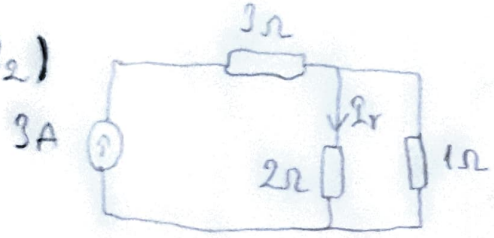


$V_x = ?$

$15 + (-10i) + (-20i) = 0$

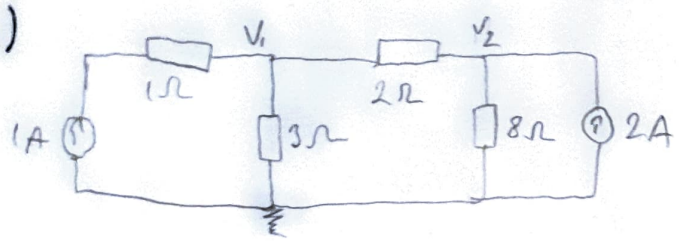
$15 = 30i \quad i = \frac{1}{2} \quad 10\cdot\frac{1}{2} = 0 = V_x$

Q2)



$I_x = ?$

Q3)



$1 + \frac{V_2 - V_1}{2} = \frac{V_1}{3}$

$\frac{V_1 - V_2}{2} + 2 = \frac{V_2}{8}$

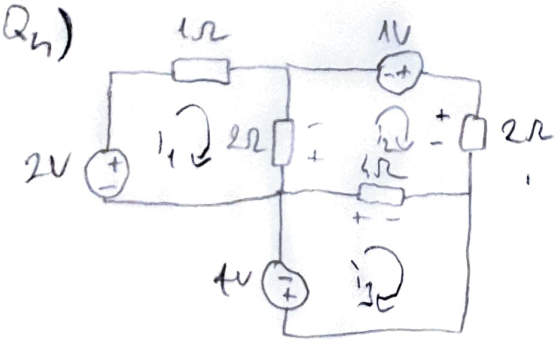
$4V_1 - 5V_2 = 16$

$5V_1 - 3V_2 = 6$

$V_1 = 6$

$V_2 = 8$

Q4)



$2 - i_1 - (i_1 - i_2)\cdot 2 = 0 \quad 2 - 3i_1 + 2i_2 = 0$

$-2i_2 - (i_2 - i_3)\cdot 4 - (i_2 - i_1)\cdot 2 = 0 \quad -1 - (i_3 - i_2)\cdot 4 = 0$

$3i_1 - 2i_2 = 2$

$2i_1 - 8i_2 + 4i_3 = -1$

$+4i_2 - 4i_3 = 1$

$i_1 = 1$

$i_2 = \frac{1}{2} \quad i_3 = \frac{1}{4}$