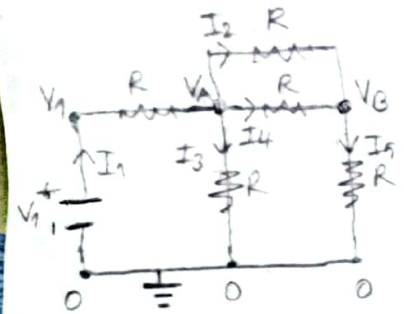
Burak ATALAY 22011641 B

Hesaplar



$I_1 = I_2 + I_3 + I_4$

$I_2 + I_4 = I_5$

$I_1 = I_3 + I_5$

$V_A = V_1 - I_1 \cdot R$

$V_B = V_A - I_4 \cdot R$

$V_B = V_A - I_2 \cdot R$ → $I_2 = I_4$

$I_2 = I_4 = \frac{I_1}{5}$

$V_A - 0 = I_3 \cdot R$

$V_B - 0 = I_5 \cdot R$

$V_B = V_A - I_2 \cdot R = I_5 R$

$V_A = I_2 \cdot R + I_5 \cdot R$ → $I_2 R + I_5 R = I_3 R$

$I_2 + I_5 = I_3$

$I_3 - I_5 = I_2$

$+ \; I_3 + I_5 = I_1$

$I_3 = \frac{I_1 + I_2}{2}$

$I_5 = \frac{I_1 - I_2}{2}$

$I_1 = I_2 + I_3 + I_4$

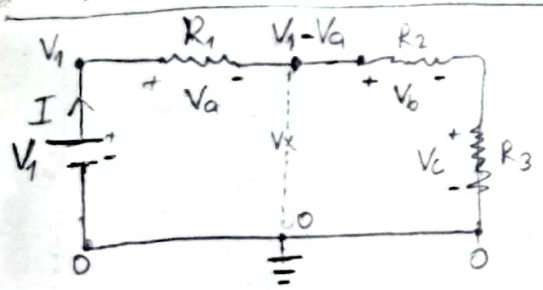
$I_1 = 2I_2 + \frac{I_1 + I_2}{2}$

$I_1 = 5I_2$

$I_3 = \frac{3I_1}{5}$, $I_5 = \frac{2I_1}{5}$

Ölçümler

I_1 (mA)	I_2 (mA)	I_3 (mA)	I_4 (mA)	I_5 (mA)
1000	250	500	250	500



a) $I = \frac{V_1}{R_{es}} = \frac{5}{200+330+470} = \frac{5}{1000} = 0{,}005$ A

$V_a = 200 \cdot 0{,}005 = 1$ V

$V_b = 330 \cdot 0{,}005 = 1{,}65$ V

$V_c = 470 \cdot 0{,}005 = 2{,}35$ V

b) $V_x = V_1 - V_a = 5 - 1 = 4$ V

c) $-V_1 + V_a + V_b + V_c = 0 \rightarrow V_1 = V_a + V_b + V_c$

$V_x = V_1 - V_a = V_b + V_c$

V_1	V_a	V_b	V_c	V_x	$V_a+V_b+V_c$
5 V	1 V	1,65 V	2,35 V	4 V	5 V