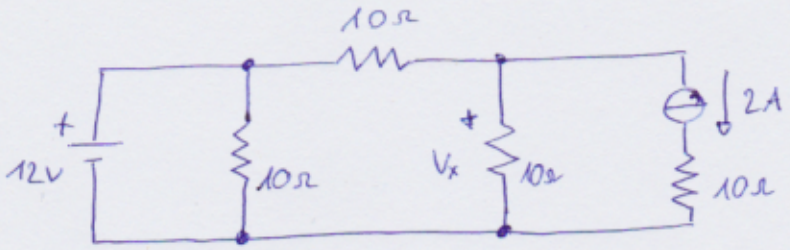
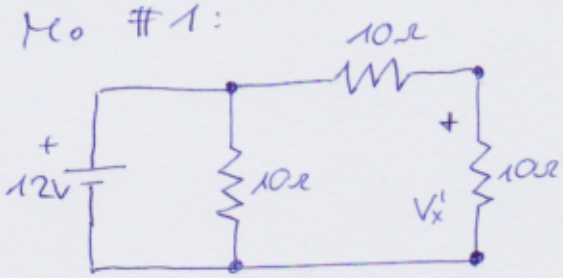
Első ICIS ZH — Áramkörök

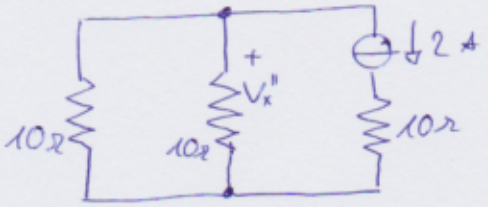


Feladat 1:
Határozza meg V_x-et Szuperpozícióval!

Feladat 2:
Határozza meg V_x-et Hurokáramok módszerével!

Mo #1:



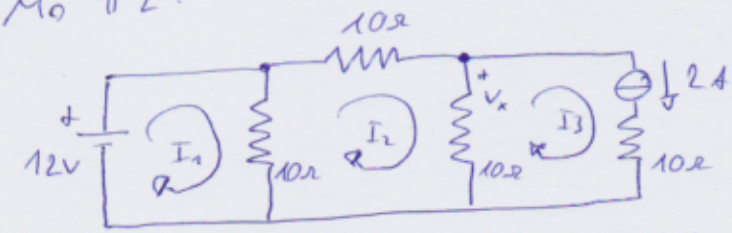


$$V_x' = 12 \frac{10}{20} = 6V$$

$$V_x'' = -2 \frac{10}{20} \cdot 10 = -10V$$

$$V_x = V_x' + V_x'' = \underline{\underline{-4V}}$$

Mo #2:



I. hurok
$$-12 + 10I_1 - 10I_2 = 0 \quad (1)$$

II. hurok
$$30I_2 - 10I_1 - 10I_3 = 0 \quad (2)$$

III. hurok
$$I_3 = 2A$$

(1) → $-10I_2 + 10I_1 - 12 = 0$

(3)→(2)→ $30I_2 - 10I_1 - 20 = 0$

$+$

$20I_2 - 32 = 0$

$$I_2 = \frac{32}{20} = 1,6A$$

$$I_{V_x} = I_2 - I_3 = 1,6 - 2 = -0,4A$$

$$V_x = -0,4 \cdot 10 = \underline{\underline{-4V}}$$

Ken Lehel