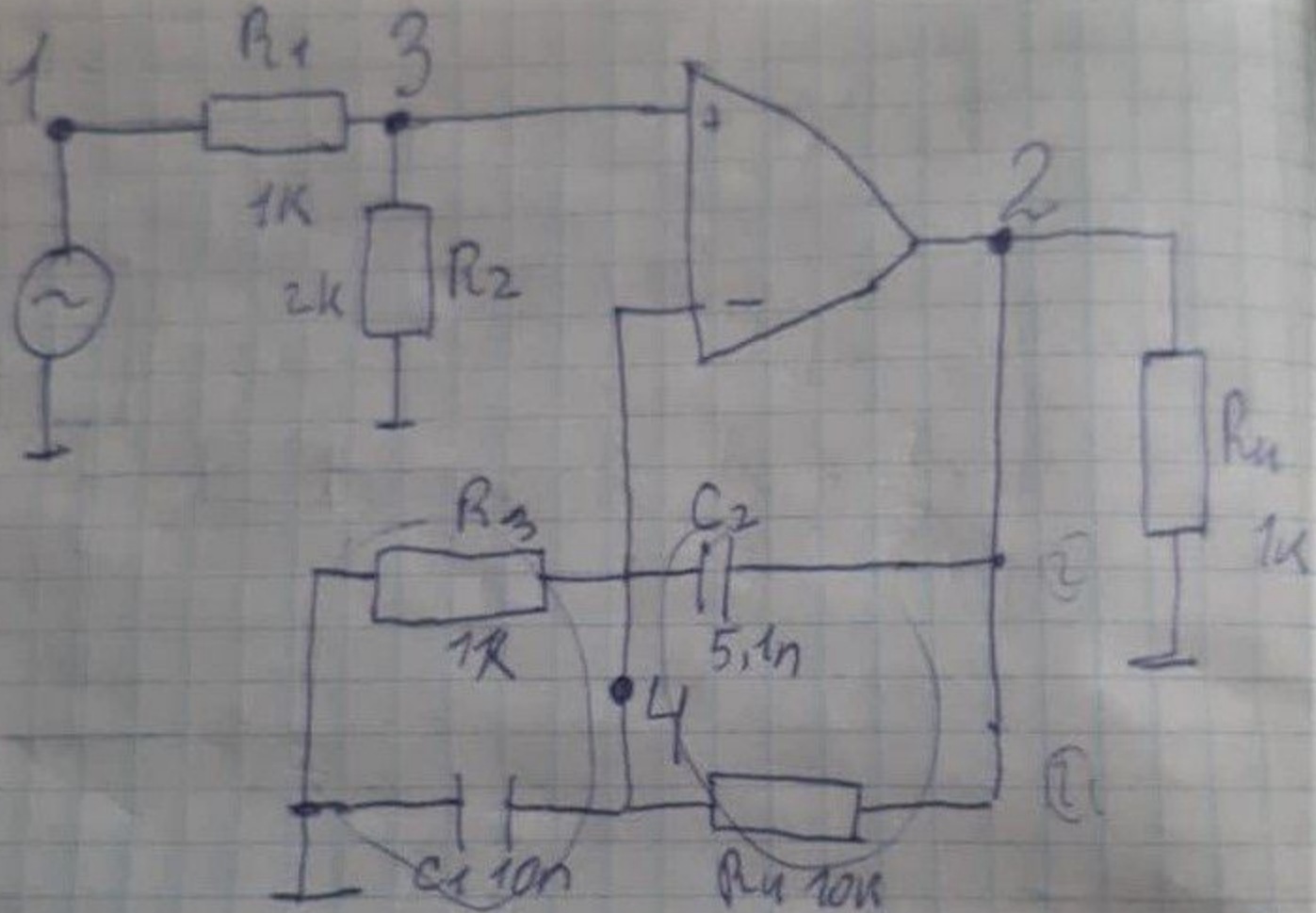
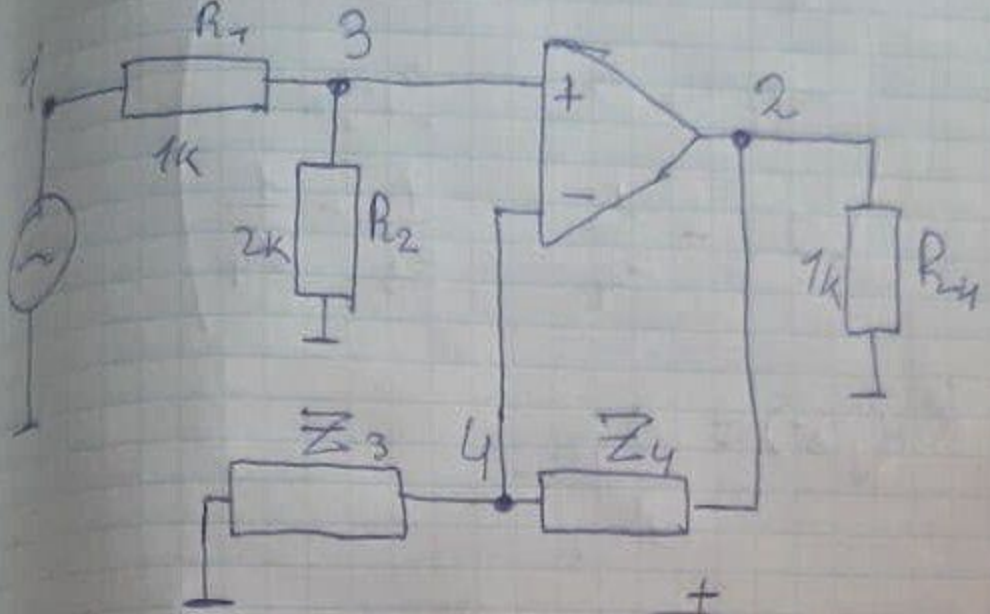

1
R1
3
1K
2k
R2
2
R3
C2
1K
5,1n
4
C1 10n
R4 10K
RH
1K

$Z_3 = g_3 + j\omega C_1$

$Z_4 = g_4 + j\omega C_2$



	1	2	3	4	
1	g_1		$-g_1$		
2		$1/g_4 + j\omega C_2$		$-1/g_4 + j\omega C_2$	
3	$-g_1$		$g_1 + g_2$		
4		$-1/g_4 + j\omega C_2$	$\frac{1}{Z_3} + \frac{1}{Z_4}$	$\frac{1}{Z_3}$	$\frac{1}{Z_4}$

$$Y = \begin{pmatrix} g_1 & 0 & -g_1 \\ -g_1 & 0 & g_1+g_2 \\ 0 & -\frac{1}{Z_4} & \frac{1}{Z_3}+\frac{1}{Z_4} \end{pmatrix}$$

$$K_u(j\omega) = \frac{\Delta_{12}}{\Delta_{11}}$$

$$\Delta_{12} = (-1)^{1+2} \begin{vmatrix} -g_1 & 0 \\ 0 & -\frac{1}{Z_4} \end{vmatrix} =$$

$$= +\frac{g_1}{Z_4}$$

$$\Delta_{12} = \frac{g_1(j\omega C_2 - g_4)}{\omega^2 C_2^2 + g_4^2}$$

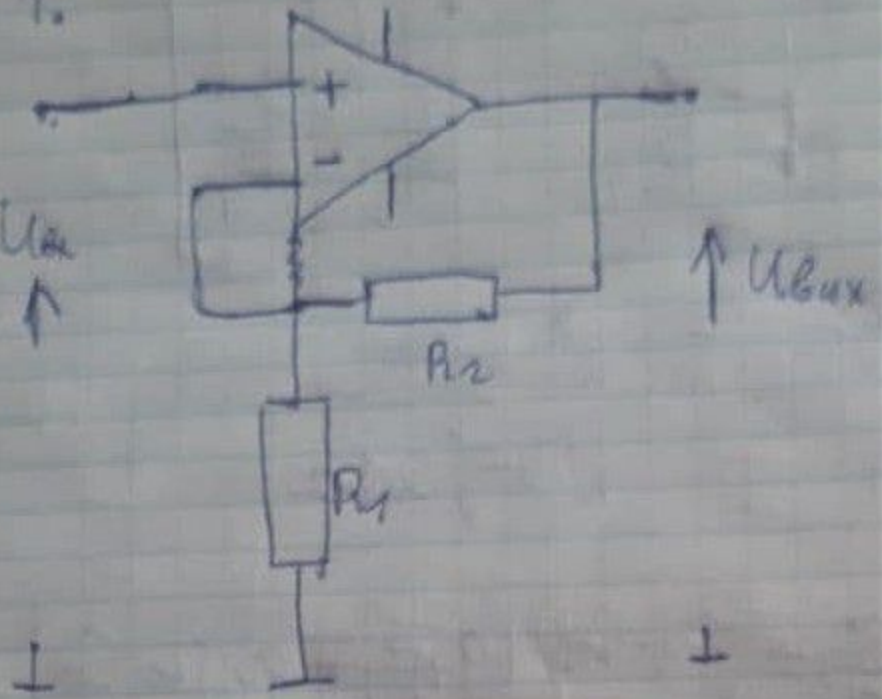
$$\Delta_{11} = (-1)^{1+1} \begin{vmatrix} 0 & g_1 + g_2 \\ -\frac{1}{Z_4} & \frac{1}{Z_3} + \frac{1}{Z_4} \end{vmatrix} =$$

$$= \frac{g_1 + g_2}{Z_4} = \frac{g_1 + g_2}{g_4 + j\omega C_2}$$

$$K_4 = -\frac{(g_4 + j\omega C_2)(g_1 g_4 - g_1 j\omega C_2)}{(g_1 + g_2)(\omega^2 \cdot C_2^2 + g_4^2)}$$

$$A_{11Y} = |K_4| = \frac{g_1 \cdot \omega^2 \cdot C_2^2 + g_1 \cdot g_4^2}{(g_1 + g_2)(\omega^2 C_2^2 + g_4^2)}$$

1.



$$K_U = 1 + \frac{R_2}{R_1}$$

$$U_{вх} = U_+ = U_-$$