

ELECTRICAL CIRCUIT THEORY

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Task I_1

An independent sinusoidal voltage generator $u_1(t) = \sqrt{2}U_1 \sin \omega t$ [V] is connected to the input port of a two-port circuit, shown at the Figure I_1. Ideal operation amplifier, impedance “matching” transformer (ideal transformer or inductive impedance converter) and controlled sources have been used.

It is known: $k = \frac{4m}{5}$, $m = \frac{N_1}{N_2}$.

Calculate effective value of the output port voltage, $U_2 = U_2(U_1, m) = ?$, (output port 2–0 is not open!), then $U_2 = ?$ if it is known $U_1 = 2,4$ [V], $m = 5$.

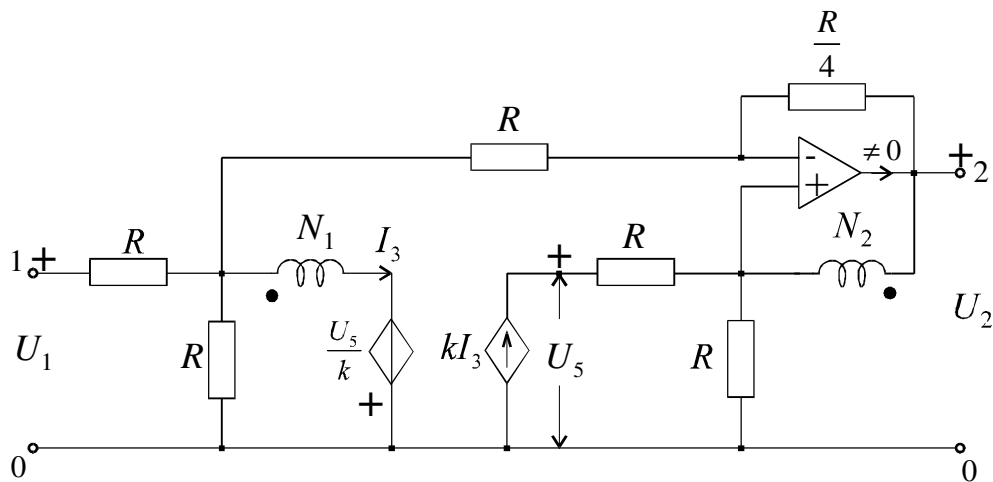


Fig. I_1