Module name: **Electrical Circuits 2**
Module ID: **IS-FEE-10085S**
Module type: **Class**
Semester: **summer 2024/2025**
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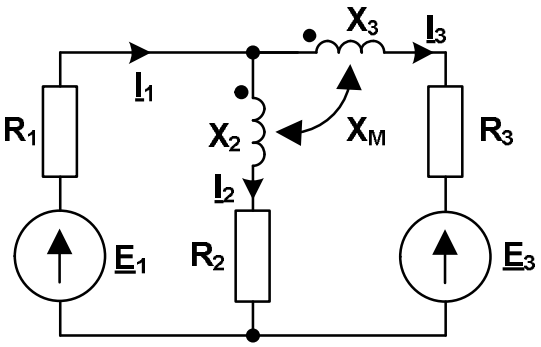
Class 3 (18.03.2025)

1. Calculate the **currents** in all branches of the circuit presented in the figure.

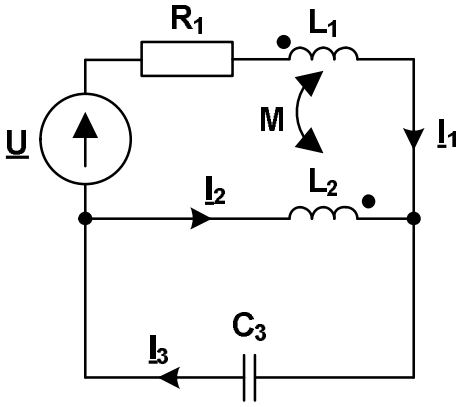
   $\underline{E}_1 = 100$ V, $\underline{E}_3 = 500$ V, $R_1 = R_2 = R_3 = 50\ \Omega$, $X_M = 50\ \Omega$, $X_2 = X_3 = 100\ \Omega$.



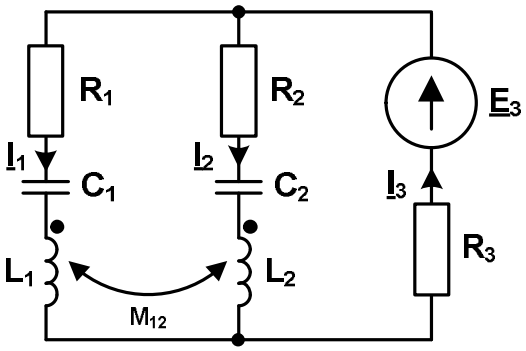
2. What should be the **power** of the resistor R_1 so that it is not damaged during operation in the circuit shown in the figure.

   $\underline{U} = 10$ V, $R_1 = 10\ \Omega$, $X_{L1} = 25\ \Omega$, $X_{L2} = 40\ \Omega$, $X_M = 10\ \Omega$, $X_{C3} = 20\ \Omega$.

   Standard resistor power: 0.125 W, 0.25 W, 0.4 W, 0.5 W, 0.6 W, 0.75 W, 1 W, 1.2 W, 2 W, 3 W, 5 W, 7 W, 8 W, 9 W.

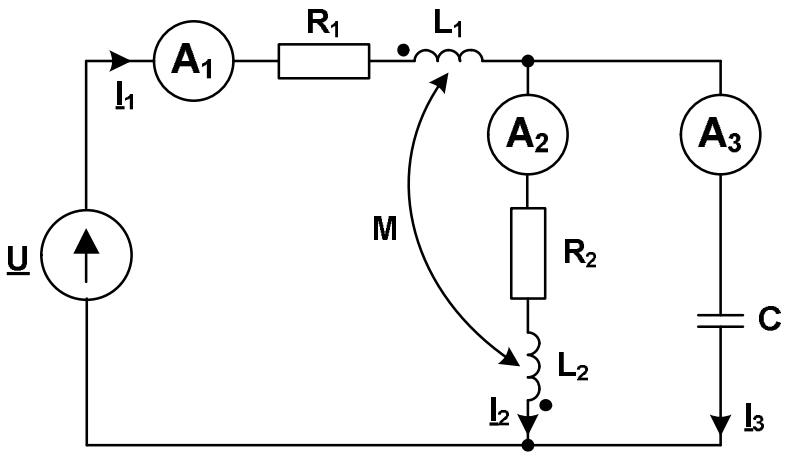


3. Write equations according to KCL and KVL for the circuit presented in the figure.



4. Calculate meter readings in the circuit shown in the figure.

$\underline{U} = 100$ V, $R_1 = R_2 = 15\ \Omega$, $X_{L1} = X_{L2} = 30\ \Omega$, $X_M = X_C = 10\ \Omega$.



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