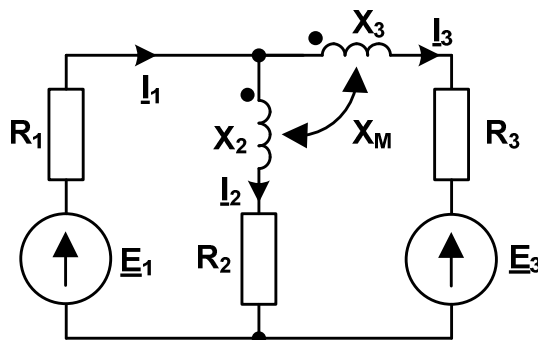


Module name: **Electrical Circuits 2**
 Module ID: **IS-FEE-10085S**
 Module type: **Class**
 Semester: **summer 2023/2024**
 Instructor: **Jarosław Forenc, j.forenc@pb.edu.pl**

Class 3 (12.03.2024)

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

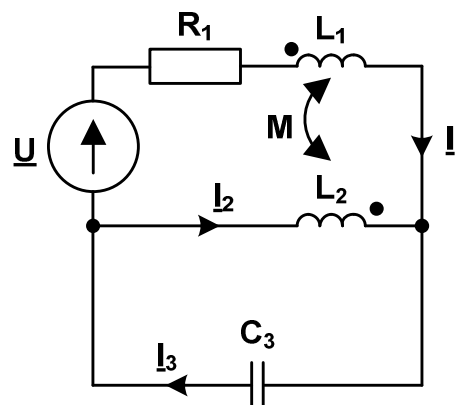
$\underline{E}_1 = 100 \text{ V}$, $\underline{E}_3 = 500 \text{ V}$, $R_1 = R_2 = R_3 = 50 \ \Omega$,
 $X_M = 50 \ \Omega$, $X_2 = X_3 = 100 \ \Omega$.



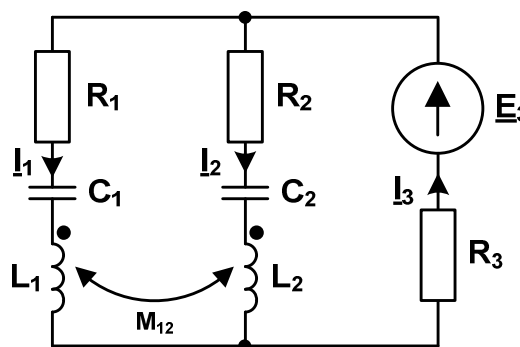
2. What should be the **power** of the resistor R_1 so that it is not damaged during operation in the circuit shown in the figure.

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

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.

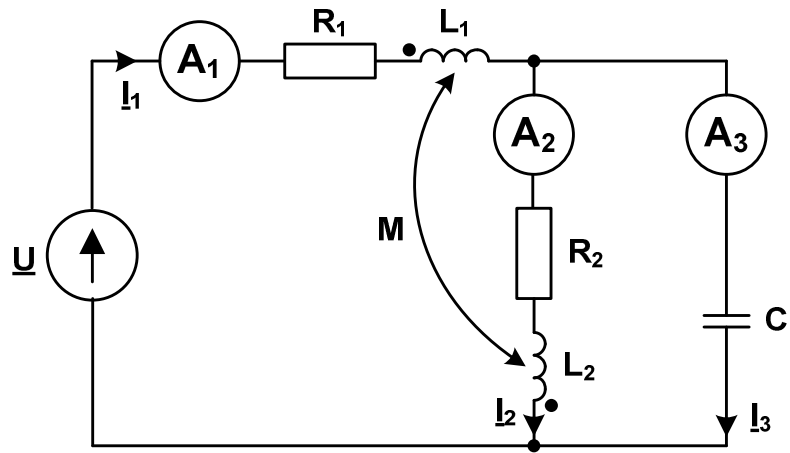


3. Write equations according to KCL and KVL for the circuit presented in the figure.



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

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



12.03.2024

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