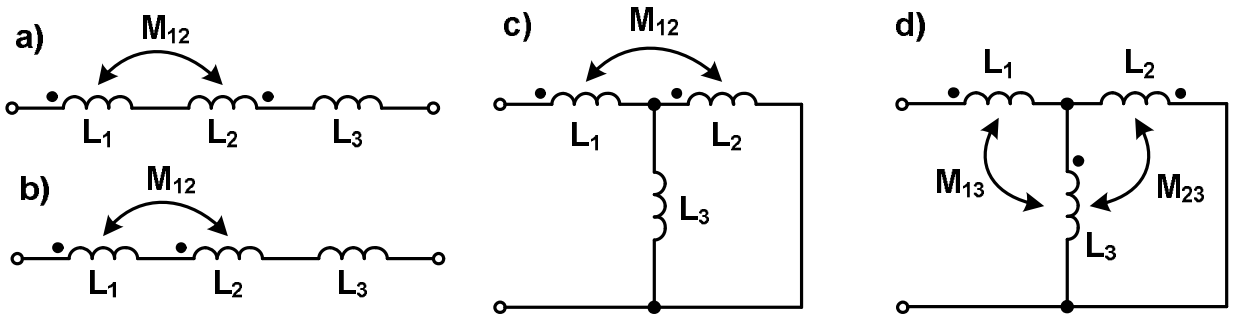
Module name: **Electrical Circuits 2**
Module ID: **IS-FEE-10085S**
Module type: **Class**
Semester: **summer 2024/2025**
Instructor: **Jarosław Forenc**, j.forenc@pb.edu.pl

Class 2 (11.03.2025)

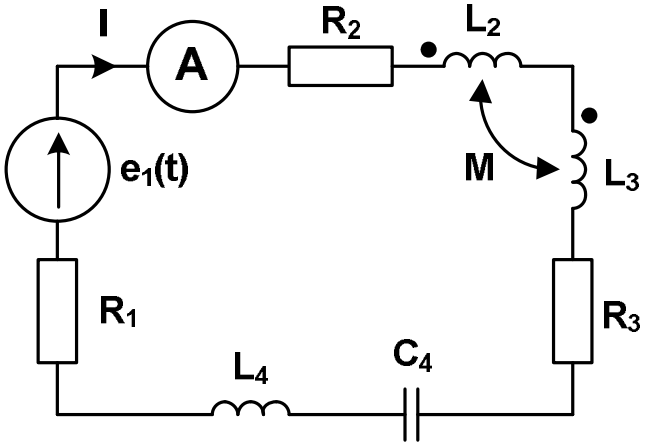
1. Eliminate couplings and calculate the equivalent inductance of the circuits shown in the figures. $L_1 = 0.1$ H, $L_2 = 0.2$ H, $L_3 = 0.4$ H, $M_{12} = 0.1$ H, $M_{23} = 0.25$ H, $M_{13} = 0.2$ H.



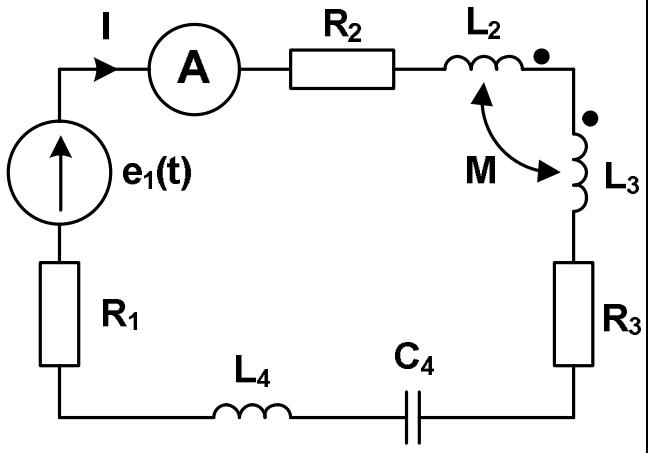
2. Calculate **ammeter readings** in the circuits shown in the figures.

$e_1(t) = 100\sqrt{2}\sin(100t+90°)$ V, $R_1 = 15\ \Omega$, $R_2 = 30\ \Omega$, $L_2 = 0.1$ H, $L_3 = 0.4$ H, $R_3 = 15\ \Omega$, $C_4 = 500\ \mu$F, $L_4 = 0.3$ H, $M = 0.1$ H.

a)

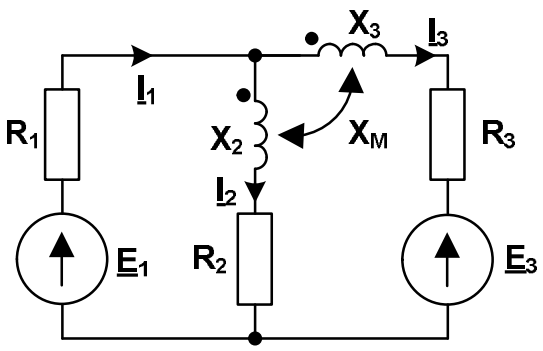


b)



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

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



11.03.2025
Jarosław Forenc, PhD
j.forenc@pb.edu.pl