Electrical Power Engineering Fundamentals

Departamento de Ingeniería Eléctrica. Universidad Carlos III de Madrid

Module 4. Three-phase AC Systems. Week 9

Exercise 1. The following circuit shows a balanced three-phase AC system. (A, B, C) is a direct sequence. Find the current I_C and the voltage $U_{B'C'}$.
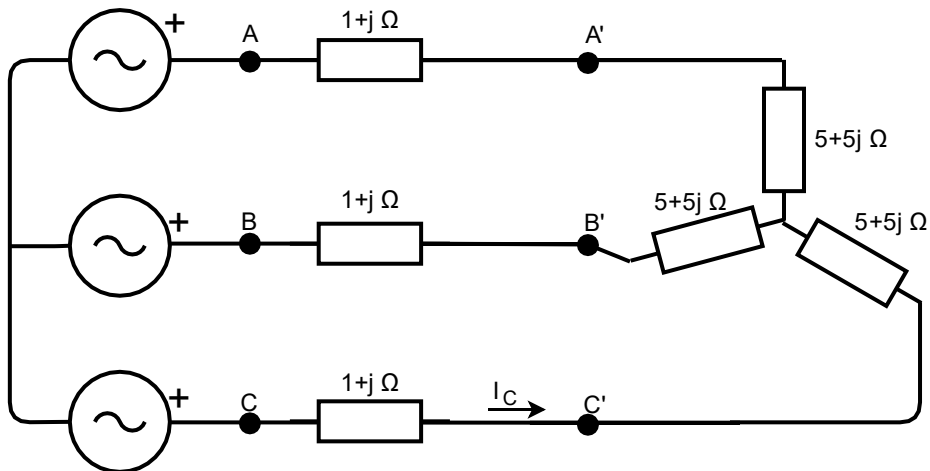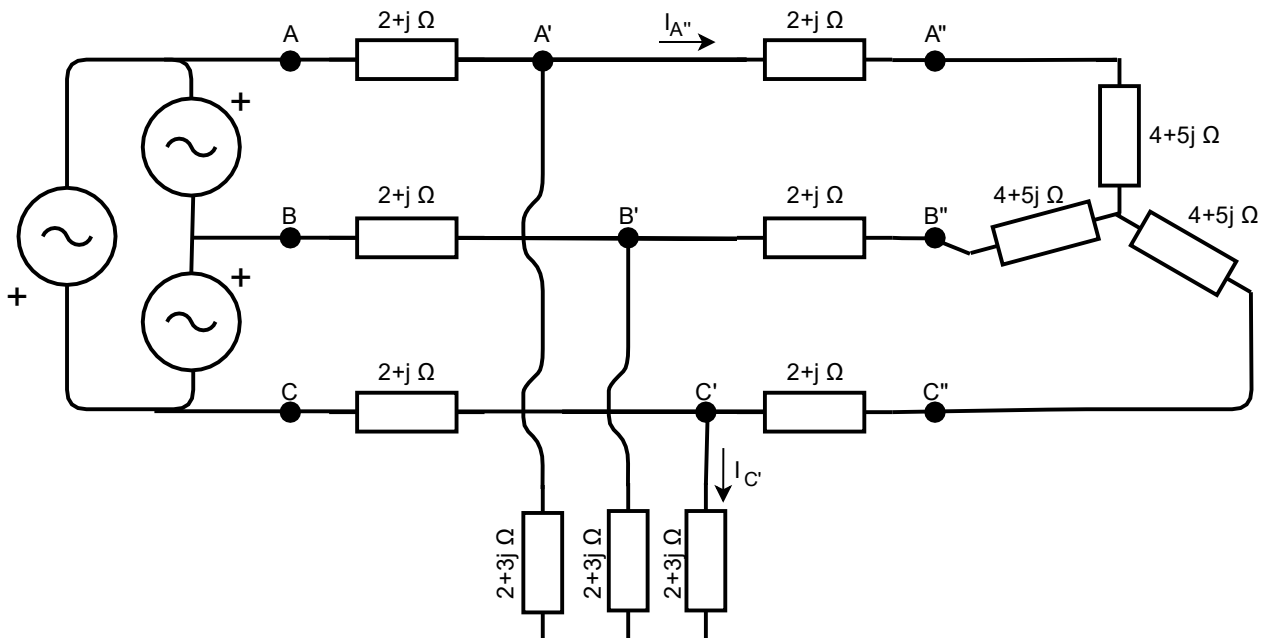
$U_{AB}=400\angle 0°$ V

Figure 1. Three-phase AC system 1

Exercise 2. The following circuit shows a balanced three-phase AC system. (A, B, C) is a direct sequence. Find:
a) the currents $I_{A''}$ and $I_{C'}$; b) the voltages $U_{A'B'}$ and $U_{C''N}$

$U_{BC} = 400\angle 30°$ V

Figure 2. Three-phase AC system 2

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Exercise 3. The following figure shows a balanced three-phase AC system. (A, B, C) is a direct sequence. Find the line voltage U_{BC} and the line current I_B, knowing that the voltage $U_{A'B'} = 220\angle 0°$ V.
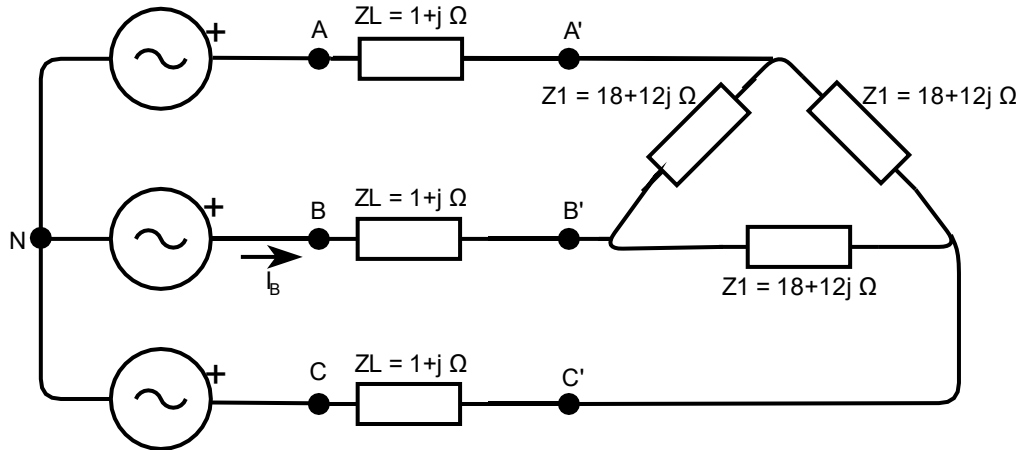

Figure 3. Three-phase AC system 3

Exercise 4. The following circuit shows a balanced three-phase AC system. (A, B, C) is a direct sequence. Find the voltage u2, knowing that the voltage $u1 = 100\angle 0°$ V.
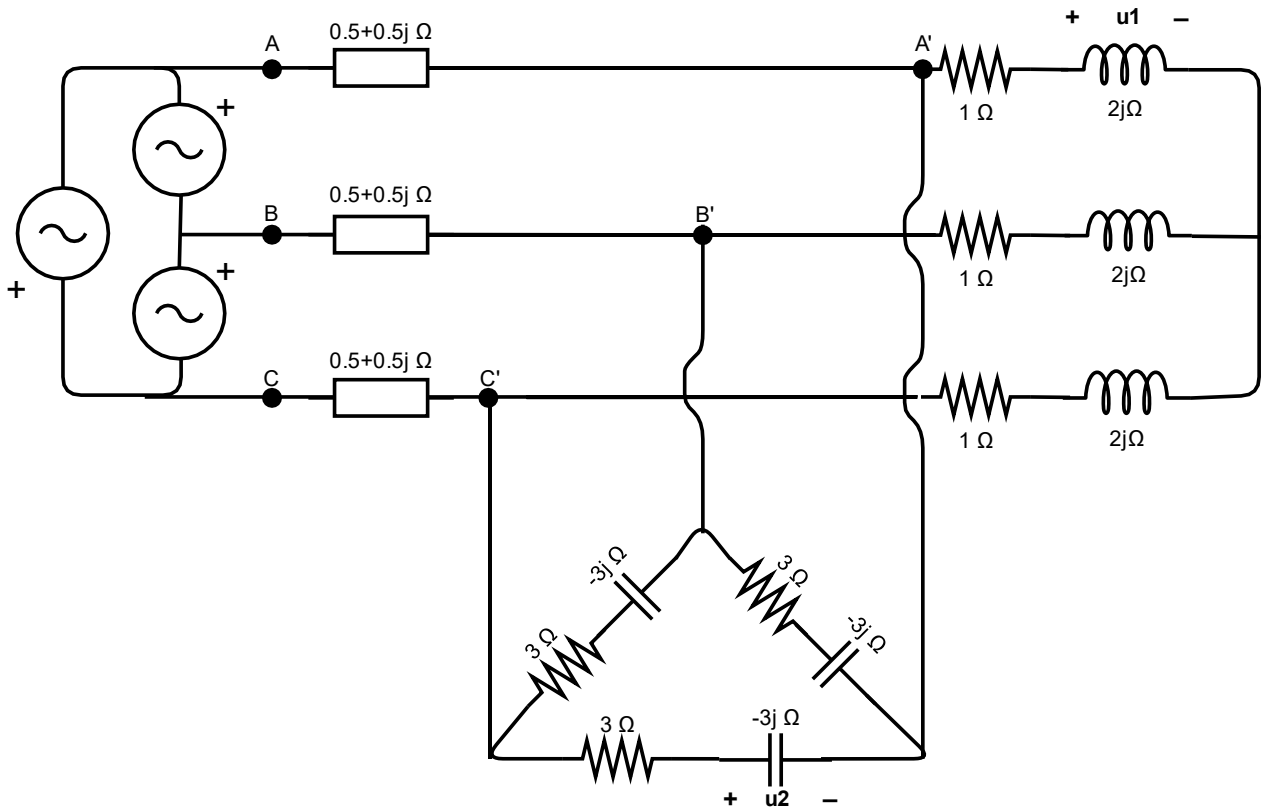

Figure 4. Three-phase AC system 4

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