# task_jti0uzudcmg4u22t_with_calculation

## Student Group

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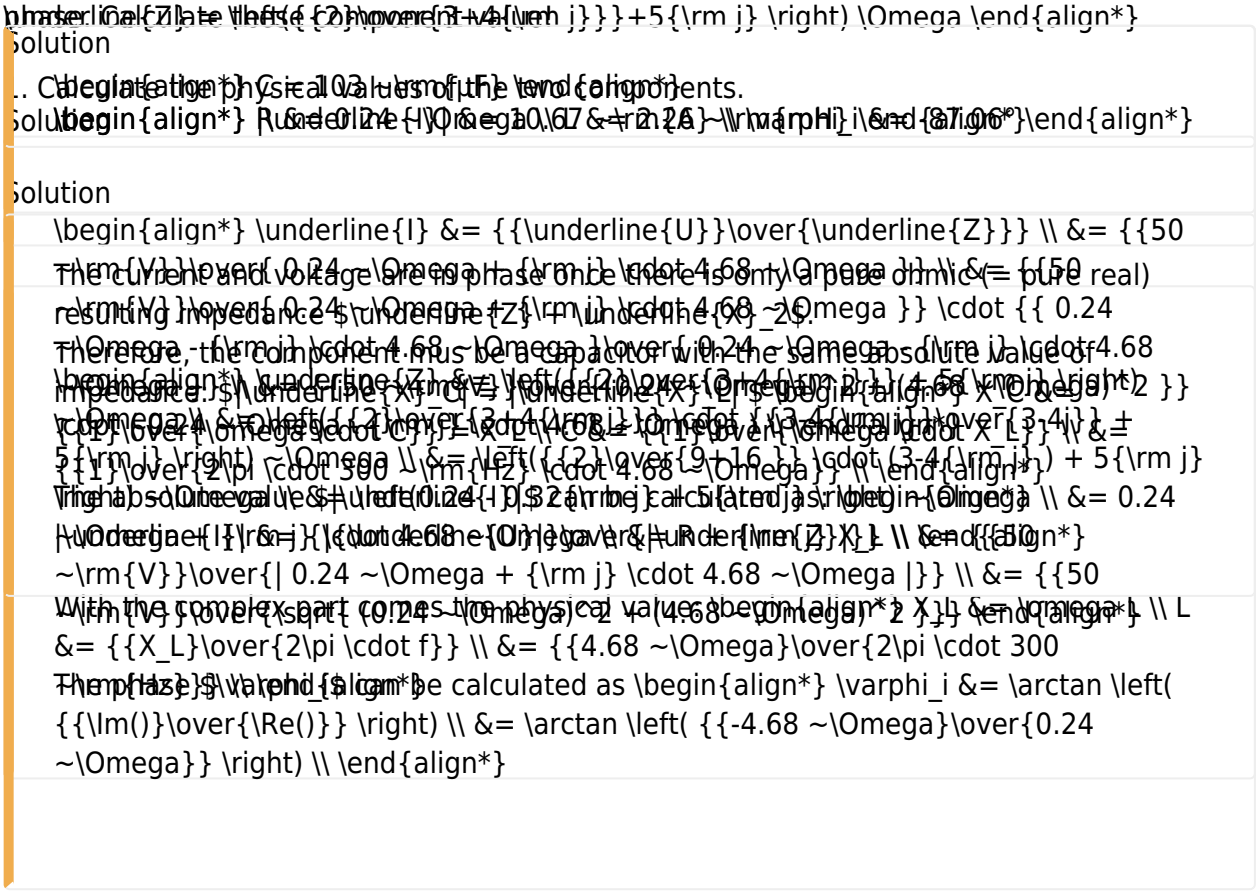
complex impedance, exam ee1 WS2022

**Exercise E1.1 Analyzing complex Impedances**
**(written test, approx. 14 % of a 60-minute written test, WS2022)**



Solution

Calculate the physical values of the components.

Solution

The current and voltage are in phase once there is only a pure ohmic (= pure real) resulting impedance $\underline{Z} = \underline{X}_1$.

Therefore, the component must be a capacitor with the same absolute value of impedance, $|\underline{X}_C| = |\underline{X}_1|$.

With the complex part comes the physical value

Thereby $\varphi_i$ can be calculated as

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