

# task\_1m3izw2szosswtto\_with\_calculation

## Student Group

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exam ee1 SS2023

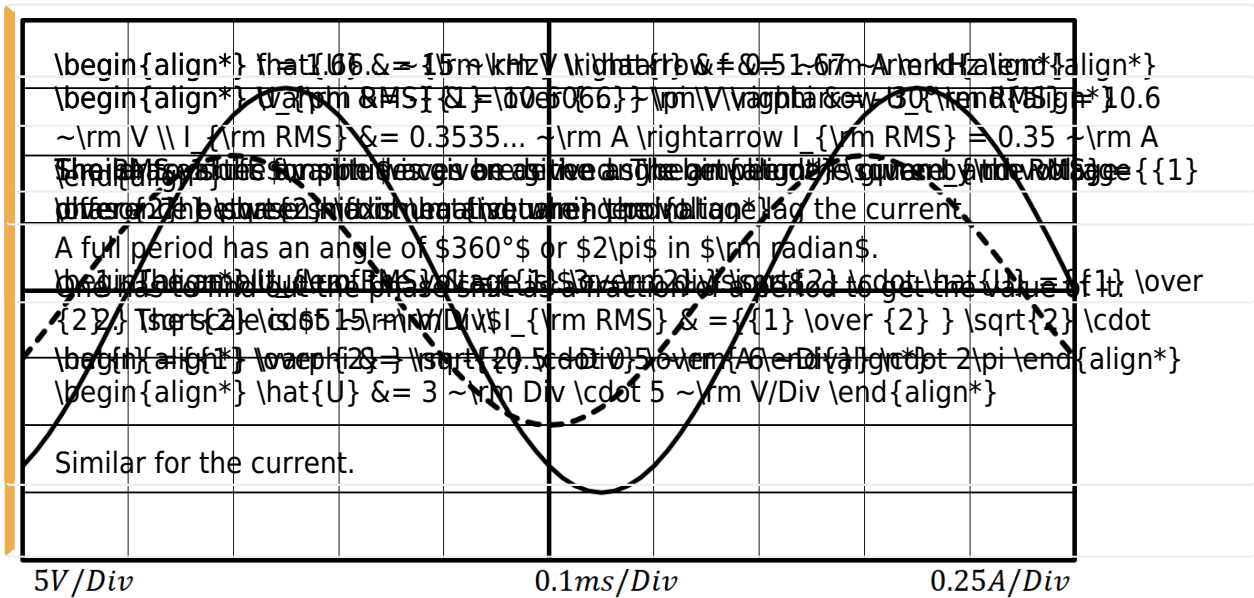
**Exercise E1 Analyzing a Scope Plot**  
 (written test, approx. 12 % of a 60-minute written test, SS2023)

Q. What is the phase shift (in degrees) between the two signals (lead or lag and in what direction)?

Result: The measured current curve shall be visible as a dashed line.

**The continuous line shows the voltage.**

Solution



Use the correct symbols and units in your answers!

1. Calculate the frequency  $f$  of the periodic signals.

Solution

Frequency  $f$  is given by the period  $T$ . The period can be measured in the image of the scope.

1. The sine waves repeat after  $6 \sim \text{rm divisions}$  (e.g. from falling turning point to falling turning point of one curve)
2. The scale is  $0.1 \sim \text{rm ms/Div}$

$$f = \frac{1}{T} \quad T = 6 \sim \text{rm Div} \cdot 0.1 \sim \text{ms/Div} \\ \rightarrow f = \frac{1}{6 \sim \text{rm Div} \cdot 0.1 \sim \text{ms/Div}}$$

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