

uebung_3.5.1

Student Group

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Table of Contents

Exercise 3.5.1 inverting amplifier 3

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1. Derive the voltage gain $A_{\text{V}} = \frac{U_{\text{O}}}{U_{\text{I}}}$ for the inverting amplifier.

Use the procedure that was used for the non-inverting amplifier.

- What is looking for?
- Number of variables?
- Number of necessary equations?
- Establishing the known equations
- Derivation of the voltage gain

Take into account that for the differential gain A_{D} of the ideal OPV applies: $A_{\text{D}} \rightarrow \infty$. And the following also applies: $1/A_{\text{D}} \rightarrow 0$

But the following doesn't always apply: $\frac{C}{U_x \cdot A_{\text{D}}} \rightarrow 0$, for an unknown constant C and a voltage U_x !

2. Which type of amplifier circuit (inverting or non-inverting amplifier) has the lower input resistance? Why?

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