

# rechnung\_spannungsfolger

## Student Group

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## Table of Contents

I. Analysis of the Currents

by (2+3)	$I_p = I_m = 0$
	Therefore, $I_p$ and $I_m$ are defined
by (3) and (5)	$I_o = I_m = 0$
	By this, $I_o$ is defined

II. Analysis of the Voltage Amplification

by (0)	$A_V = \frac{U_O}{U_I}$
	$A_V = \frac{U_O}{U_I}$
	with (4)
	$A_V = \frac{U_O}{U_O + U_D}$
	$A_V = \frac{U_O}{U_O + U_D}$
	with (1)
	$A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D}$
	$A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D}$
	$A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D}$
	Expand with $\frac{1}{A_D \cdot U_D}$
	$A_V = \frac{A_D \cdot U_D \cdot \frac{1}{A_D \cdot U_D}}{(A_D \cdot U_D + U_D) \cdot \frac{1}{A_D \cdot U_D}}$
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$
	with $\frac{1}{A_D} \rightarrow \infty$
	$A_V = \frac{1}{1 + 0}$

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$\$ \backslash \text{quad} \$$	$\$ A\_V = \frac{1}{1} = 1 \$$
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