rechnung_spannungsfolger

Student Group

First Name	Surname	Matrikel Nr.

Table of Contents

$I.\quad$ Analysis of the Currents

by (2+3)	$\color{blue}{I_p} = \color{blue}{I_m} = 0$
	Therefore, I_p and I_m are defined
$\quad\quad\quad$	$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$
by (3) and (5)	$\color{blue}{I_o} = I_m = 0$
	By this, I_o is defined
$\quad\quad\quad$	$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$

$II.\quad$ Analysis of the Voltage Amplification

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

	$\quad$
$\quad\quad\quad$	$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$
$\quad$	$A_V=\frac{1}{1}=1$
	$\quad$
$\quad\quad\quad$	$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$