

calc_decimal_example

Student Group

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i

$\$1.\!\!\!\!\!\quad$ Calculation example for decimal value

value		2	6	5	8	,	4	7
index	i	3	2	1	0		-1	-2
place value	B^i	10^3 \$1000\$	10^2 \$100\$	10^1 \$10\$	10^0 \$1\$		10^{-1} \$0.1\$	10^{-2} \$0.01\$
digit	z_i	2	6	5	8		4	7
calculation	$z_i \cdot B^i$	2000	600	50	8		0.4	0.07
Result	$\sum_i z_i \cdot B^i$	2658,47						

aus (2+3)	$\textcolor{blue}{i}_p = \textcolor{blue}{i}_m = 0$	$\$l_p$ und $\$l_m$ sind damit definiert
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$
aus (6)	$\textcolor{blue}{i}_o = 1$	$\$l_o$ ist damit bekannt, wenn $\$l_1$ bekannt ist
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$
aus (7) und (3)	$\$l_1 - 1_2 - \textcolor{blue}{0} = 0$	$\$l_{quad}$
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$
$\$l_{quad}$	$\$l_1 = 1_2 = 1_o$	$\$l_{quad}$
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$
$\$l_{quad}$	$\textcolor{blue}{i}_1 = \textcolor{blue}{i}_2 = \textcolor{blue}{i}_o$	mit (8) und (9): $\$l_{boxed} = \textcolor{blue}{i}_{boxed} \textcolor{blue}{i}_{boxed}$ und (5)
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$
$\$l_{quad}$	$\frac{\textcolor{blue}{U}_1}{R_1} = \frac{\textcolor{blue}{U}_2}{R_2} = \frac{\textcolor{blue}{U}_A}{R_1 + R_2}$	Spannungsteilerformel, $\$l = \text{const.}$
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$
(10)	$\$U_2 = U_A \cdot \frac{R_2}{R_1 + R_2}$	Spannungsteilerformel
$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$	$\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$

\$II.\quad\$ Betrachtung der Spannungsverstärkung

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Last update: **2021/09/15 01:35**

