

calc_decimal_example

Student Group

First Name	Surname	Matrikel Nr.

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

$$\begin{aligned} & \begin{matrix} \text{align*} \end{matrix} \begin{matrix} \begin{matrix} \text{smallmatrix} \end{matrix} \begin{matrix} \text{color}\{\text{black}\}\{\text{text}\{\text{value}\}\}: & \& \text{color}\{\text{black}\}\{\} & \& \text{color}\{\text{black}\}\{2\} & \& \text{color}\{\text{black}\}\{6\} & \& \text{color}\{\text{black}\}\{5\} & \& \text{color}\{\text{black}\}\{8.\} & \& \text{color}\{\text{black}\}\{4\} & \& \text{color}\{\text{black}\}\{7\} \end{matrix} \\ & \begin{matrix} \text{color}\{\text{white}\}\{\text{index}\}: & \& \text{color}\{\text{white}\}\{i\} & \& \text{color}\{\text{white}\}\{3\} & \& \text{color}\{\text{white}\}\{2\} & \& \text{color}\{\text{white}\}\{1\} & \& \text{color}\{\text{white}\}\{0\} & \& \text{color}\{\text{white}\}\{-1\} & \& \text{color}\{\text{white}\}\{-2\} \end{matrix} \\ & \begin{matrix} \text{color}\{\text{white}\}\{\text{place value}\}: & \& \text{color}\{\text{white}\}\{B^i\} & \& \text{color}\{\text{white}\}\{10^3\} & \& \text{color}\{\text{white}\}\{10^2\} & \& \text{color}\{\text{white}\}\{10^1\} & \& \text{color}\{\text{white}\}\{10^0\} & \& \text{color}\{\text{white}\}\{10^{-1}\} & \& \text{color}\{\text{white}\}\{10^{-2}\} \end{matrix} \\ & \begin{matrix} \text{color}\{\text{white}\}\{\} & \& \text{color}\{\text{white}\}\{\} & \& \text{color}\{\text{white}\}\{1000\} & \& \text{color}\{\text{white}\}\{100\} & \& \text{color}\{\text{white}\}\{10\} & \& \text{color}\{\text{white}\}\{1\} & \& \text{color}\{\text{white}\}\{0.1\} & \& \text{color}\{\text{white}\}\{0.01\} \end{matrix} \\ & \begin{matrix} \text{color}\{\text{white}\}\{\text{digit}\}: & \& \text{color}\{\text{white}\}\{z_i\} & \& \text{color}\{\text{white}\}\{2\} & \& \text{color}\{\text{white}\}\{6\} & \& \text{color}\{\text{white}\}\{5\} & \& \text{color}\{\text{white}\}\{8\} & \& \text{color}\{\text{white}\}\{4\} & \& \text{color}\{\text{white}\}\{7\} \end{matrix} \\ & \begin{matrix} \text{color}\{\text{white}\}\{\text{calc.}\}: & \& \text{color}\{\text{white}\}\{z_i \cdot B^i\} & \& \text{color}\{\text{white}\}\{2000\} & \& \text{color}\{\text{white}\}\{600\} & \& \text{color}\{\text{white}\}\{50\} & \& \text{color}\{\text{white}\}\{8\} & \& \text{color}\{\text{white}\}\{0.4\} & \& \text{color}\{\text{white}\}\{0.07\} \end{matrix} \\ & \begin{matrix} \text{color}\{\text{white}\}\{\text{result}\}: & \& \text{color}\{\text{white}\}\{\sum_i z_i \cdot B^i\} & \& \& \& \text{color}\{\text{white}\}\{2658.47\} \end{matrix} \\ & \end{matrix} \end{matrix}$$

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\begin{align*} \begin{smallmatrix} \color{black}{\text{value}}: & \color{black}{} & \\ \color{black}{2} & \color{black}{6} & \color{black}{5} & \color{black}{8.} & \color{black}{4} & \\ \color{black}{7} & \color{white}{\text{index}}: & \color{white}{i} & \color{white}{3} & \\ \color{white}{2} & \color{white}{1} & \color{white}{0} & \color{white}{-1} & \color{white}{-2} & \\ \color{white}{\text{place value}}: & \color{white}{B^i} & \color{white}{10^3} & \\ \color{white}{10^2} & \color{white}{10^1} & \color{white}{10^0} & \color{white}{10^{-1}} & \\ \color{white}{10^{-2}} & \color{white}{} & \color{white}{} & \color{white}{1000} & \\ \color{white}{100} & \color{white}{10} & \color{white}{1} & \color{white}{0.1} & \\ \color{white}{0.01} & \color{white}{\text{digit}}: & \color{white}{z_i} & \color{white}{2} & \\ \color{white}{6} & \color{white}{5} & \color{white}{8} & \color{white}{4} & \color{white}{7} & \\ \color{white}{\text{calc.}}: & \color{white}{z_i \cdot B^i} & \color{white}{2000} & \\ \color{white}{600} & \color{white}{50} & \color{white}{8} & \color{white}{0.4} & \\ \color{white}{0.07} & \color{white}{\text{result}}: & \color{white}{\sum_i z_i \cdot B^i} & & \\ \color{white}{2658.47} & \end{smallmatrix} \end{align*}
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\begin{align*} \begin{smallmatrix} \color{black}{\text{value}}: & \color{black}{} & \\ \color{black}{^2} & \color{black}{^6} & \color{black}{^5} & \color{black}{^8} & \color{black}{^4} & \\ \color{black}{^7} \\ \color{blue}{\text{index}}: & \color{blue}{^i} & \color{blue}{^3} & \color{blue}{^2} & \color{blue}{^1} & \color{blue}{^0} & \color{blue}{^{-1}} & \color{blue}{^{-2}} \\ \color{white}{\text{place value}}: & \color{white}{B^i} & \color{white}{10^3} & \color{white}{10^2} & \color{white}{10^1} & \color{white}{10^0} & \color{white}{10^{-1}} & \color{white}{10^{-2}} \\ \color{white}{} & \color{white}{} & \color{white}{1000} & \color{white}{100} & \color{white}{10} & \color{white}{1} & \color{white}{0.1} & \color{white}{0.01} \\ \color{white}{\text{digit}}: & \color{white}{z_i} & \color{white}{^2} & \color{white}{^6} & \color{white}{^5} & \color{white}{^8} & \color{white}{^4} & \color{white}{^7} \\ \color{white}{\text{calc.}}: & \color{white}{z_i \cdot B^i} & \color{white}{2000} & \color{white}{600} & \color{white}{50} & \color{white}{8} & \color{white}{0.4} & \color{white}{0.07} \\ \color{white}{\text{result}}: & \color{white}{\sum_i z_i \cdot B^i} & & & & & & \\ \color{white}{2658.47} \end{smallmatrix} \end{align*}
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$$\begin{matrix} \text{\color{black}\textit{value}} & : & \text{\color{black}} & & \text{\color{black}} \\ \text{\color{black}} & & \text{\color{black}} & & \text{\color{black}} \end{matrix}$$

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\color{black}{2} & \color{black}{6} & \color{black}{5} & \color{black}{8.} & \color{black}{4} &
\color{black}{7} \\ \color{black}{\text{index}}: & \color{black}{i} & \color{black}{3} &
\color{black}{2} & \color{black}{1} & \color{black}{0} & \color{black}{-1} & \color{black}{-2} \\
\color{blue}{\text{place value}}: & \color{blue}{B^i} & \color{blue}{10^3} & \color{blue}
\color{blue}{10^2} & \color{blue}{10^1} & \color{blue}{10^0} & \color{blue}{10^{-1}} & \color{blue}
\color{blue}{10^{-2}} \\ \color{white}{} & \color{white}{} & \color{white}{1000} & \color{white}{100} &
\color{white}{10} & \color{white}{1} & \color{white}{0.1} & \color{white}{0.01} \\
\color{white}{\text{digit}}: & \color{white}{z_i} & \color{white}{2} & \color{white}{6} &
\color{white}{5} & \color{white}{8} & \color{white}{4} & \color{white}{7} \\
\color{white}{\text{calc.}}: & \color{white}{z_i \cdot B^i} & \color{white}{2000} &
\color{white}{600} & \color{white}{50} & \color{white}{8} & \color{white}{0.4} &
\color{white}{0.07} \\ \color{white}{\text{result}}: & \color{white}{\sum_i z_i \cdot B^i} & & &
\color{white}{2658.47} \\ \end{smallmatrix} \end{align*}

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\begin{align*} \begin{smallmatrix} \color{black}{\text{value}}: & \color{black}{} &
\color{black}{2} & \color{black}{6} & \color{black}{5} & \color{black}{8.} & \color{black}{4} &
\color{black}{7} \\ \color{black}{\text{index}}: & \color{black}{i} & \color{black}{3} &
\color{black}{2} & \color{black}{1} & \color{black}{0} & \color{black}{-1} & \color{black}{-2} \\
\color{black}{\text{place value}}: & \color{black}{B^i} & \color{black}{10^3} &
\color{black}{10^2} & \color{black}{10^1} & \color{black}{10^0} & \color{black}{10^{-1}} &
\color{black}{10^{-2}} \\ \color{black}{} & \color{black}{} & \color{black}{1000} &
\color{black}{100} & \color{black}{10} & \color{black}{1} & \color{black}{0.1} &
\color{black}{0.01} \\ \color{black}{\text{digit}}: & \color{black}{z_i} & \color{black}{2} &
\color{black}{6} & \color{black}{5} & \color{black}{8} & \color{black}{4} & \color{black}{7} \\
\color{black}{\text{calc.}}: & \color{black}{z_i \cdot B^i} & \color{black}{2000} &
\color{black}{600} & \color{black}{50} & \color{black}{8} & \color{black}{0.4} &
\color{black}{0.07} \\ \color{black}{\text{result}}: & \color{black}{\sum_i z_i \cdot B^i} & & &
\color{black}{2658.47} \\ \end{smallmatrix} \end{align*}

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\begin{align*} \begin{smallmatrix} \color{blue}{\text{value}}: & \color{blue}{} & \color{blue}
\color{blue}{2} & \color{blue}{6} & \color{blue}{5} & \color{blue}{8.} & \color{blue}{4} & \color{blue}
\color{blue}{7} \\ \color{blue}{\text{index}}: & \color{blue}{i} & \color{blue}{3} & \color{blue}{2} &
\color{blue}{1} & \color{blue}{0} & \color{blue}{-1} & \color{blue}{-2} \\
\color{blue}{\text{place value}}: & \color{blue}{B^i} & \color{blue}{10^3} & \color{blue}{10^2} &
\color{blue}{10^1} & \color{blue}{10^0} & \color{blue}{10^{-1}} & \color{blue}{10^{-2}} \\
\color{blue}{} & \color{blue}{} & \color{blue}{1000} & \color{blue}{100} & \color{blue}{10} &
\color{blue}{1} & \color{blue}{0.1} & \color{blue}{0.01} \\ \color{blue}{\text{digit}}: &
\color{blue}{z_i} & \color{blue}{2} & \color{blue}{6} & \color{blue}{5} & \color{blue}{8} &
\color{blue}{4} & \color{blue}{7} \\ \color{blue}{\text{calc.}}: & \color{blue}{z_i \cdot B^i} &
\color{blue}{2000} & \color{blue}{600} & \color{blue}{50} & \color{blue}{8} & \color{blue}
\color{blue}{0.4} & \color{blue}{0.07} \\ \color{blue}{\text{result}}: & \color{blue}{\sum_i z_i \cdot B^i} &
& & & & &
\color{blue}{2658.47} \\ \end{smallmatrix} \end{align*}

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\begin{align*} \begin{smallmatrix} \color{white}{\text{value}}: & \color{white}{} &
\color{white}{2} & \color{white}{6} & \color{white}{5} & \color{white}{8.} & \color{white}{4} &
\color{white}{7} \\ \color{white}{\text{index}}: & \color{white}{i} & \color{white}{3} &
\color{white}{2} & \color{white}{1} & \color{white}{0} & \color{white}{-1} & \color{white}{-2} \\
\color{white}{\text{place value}}: & \color{white}{B^i} & \color{white}{10^3} &
\color{white}{10^2} & \color{white}{10^1} & \color{white}{10^0} & \color{white}{10^{-1}} &
\color{white}{10^{-2}} \\ \end{smallmatrix} \end{align*}

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$$\begin{aligned} & \backslash\textcolor{white}{10^{\{-2\}}}\backslash\backslash\textcolor{white}{\{}}\&\textcolor{white}{\{}}\&\textcolor{white}{1000}\& \\ & \textcolor{white}{\{100\}}\&\textcolor{white}{\{10\}}\&\textcolor{white}{\{1\}}\&\textcolor{white}{\{0.1\}}\& \\ & \textcolor{white}{\{0.01\}}\backslash\backslash\textcolor{white}{\{\text{digit}\}}\&\textcolor{white}{\{z_i\}}\&\textcolor{white}{\{2\}}\& \\ & \textcolor{white}{\{6\}}\&\textcolor{white}{\{5\}}\&\textcolor{white}{\{8\}}\&\textcolor{white}{\{4\}}\&\textcolor{white}{\{7\}}\backslash\backslash \\ & \textcolor{white}{\{\text{calc.}\}}\&\textcolor{white}{\{z_i\cdot B^i\}}\&\textcolor{white}{\{2000\}}\& \\ & \textcolor{white}{\{600\}}\&\textcolor{white}{\{50\}}\&\textcolor{white}{\{8\}}\&\textcolor{white}{\{0.4\}}\& \\ & \textcolor{white}{\{0.07\}}\backslash\backslash\textcolor{white}{\{\text{result}\}}\&\textcolor{white}{\{\sum_i z_i\cdot B^i\}}\&\&\& \\ & \textcolor{white}{\{2658.47\}}\backslash\backslash\end{smallmatrix}\end{align*}$$
[illegible]

\$II.\quad\$ Betrachtung der Spannungsverstärkung

[illegible]

$A_V = \frac{1}{R_1 + R_2} + \frac{1}{R_2}$	$\text{mit } \frac{1}{A_D} \rightarrow \frac{1}{A_D} \rightarrow \infty$
$A_V = \frac{1}{R_1 + R_2}$	Bruch umformen
$A_V = \frac{1}{R_1 + R_2}$	
$A_V = \frac{1}{R_1 + R_2}$	
$A_V = \frac{1}{R_1 + R_2}$	

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Last update: **2021/09/15 02:33**

