20190910

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Vom Dezimalsystem ins Binärsystem

Divisionsverfahren

$(173)_{10} = (10101101)_2$

		R
173 : 2	= 86	1
86 : 2	= 43	0
43 : 2	= 21	1
21 : 2	= 10	1
10 : 2	= 5	0
5 : 2	= 2	1
2 : 2	= 1	0
1 : 2	= 0	1

LSB Least significant bit 2^0

MSB Most significant bit 2^7

	R
173 : 10 = 17	3
17 : 10 = 1	7
1 : 10 = 0	1

$(217)_{10} = (11011001)_2$

217 : 2	= 108	R 1 LSB
108 : 2	= 54	R 0
54 : 2	= 27	R 0
27 : 2	= 13	R 1
13 : 2	= 6	R 1
6 : 2	= 3	R 0
3 : 2	= 1	R 1
1 : 2	= 0	R 1 MSB

217	108	54	27	13	6	3	1
1	0	0	1	1	0	1	1

LSB ← MSB

Subtraktionsverfahren

128 64 32 16 8 4 2 1

$(173)_{10} = (1010\ 1101)_2$

$(173)_{10} = (1010\ 1101)_2$

$173 - 128 = 45$		1	MSB
$45 - 64$	↓	0	↓
$45 - 32 = 13$		1	
$13 - 16$	↓	0	
$13 - 8 = 5$		1	
$5 - 4 = 1$		1	
$1 - 2$	↓	0	
$1 - 1 = 0$		1	LSB

$(170)_{10} = 170 - 128 = 42$ → 1

$42 - 64$ → 0

$42 - 32$ → 1

$10 - 16$ → 0

$10 - 8$ → 1

$2 - 4$ → 0

$2 - 2$ → 1

$0 - 1$ → 0

217

128	64	32	16	8	4	2	1
1	1	0	1	1	0	0	1

MSB LSB

89 25 9 1