

Musterlösung

Umrechnung von Binär- in Dezimalzahlen

Übung 1:

Ausführliche Lösung:

1.

$$\begin{array}{cccccc}
 2^5 & 2^4 & 2^3 & 2^2 & 2^1 & 2^0 \\
 1 & 1 & 0 & 1 & 0 & 0
 \end{array}$$

2.

$$2^5 * 1 = 32$$

$$2^4 * 1 = 16$$

$$2^3 * 0 = 0$$

$$2^2 * 1 = 4$$

$$2^1 * 0 = 0$$

$$2^0 * 0 = 0$$

3.

$$32 + 16 + 4 = 52$$

Eine weitere Darstellung:

2^5	2^4	2^3	2^2	2^1	2^0
32	16	8	4	2	1

1	1	0	1	0	0
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$$4 + 16 + 32 = 52$$



Übung 2:

2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
256	128	64	32	16	8	4	2	1

1	1	0	1	1	1	1	0	1
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$$1 + 4 + 8 + 16 + 32 + 128 + 256 = 445$$

Übung 3:

2^{10}	2^9	2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
1024	512	256	128	64	32	16	8	4	2	1

1	0	1	1	1	1	1	0	0	0	0
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$$16 + 32 + 64 + 128 + 256 + 1024 = 1520$$