

Umrechnung vom/ins Dual-/Hexadezimalsystem (Knoppers Rechenweg)

DUALSYSTEM:

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

$$585_{10} = \underline{1} * 512 + \underline{0} * 256 + \underline{0} * 128 + \underline{1} * 64 + \underline{0} * 32 + \underline{0} * 16 + \underline{1} * 8 + \underline{0} * 4 + \underline{0} * 2 + \underline{1} * 1$$

$$= 1001001001_2$$

$$142_{10} = 10001110_2$$

$$\text{Kontrolle: } 0 * 1 + 1 * 2 + 1 * 4 + 1 * 8 + 0 * 16 + 0 * 32 + 0 * 64 + 1 * 128 = 142$$

$$110011001_2 = 1 * 256 + 1 * 128 + 0 * 64 + 0 * 32 + 1 * 16 + 1 * 8 + 0 * 4 + 0 * 2 + 1 * 1 = 409_{10}$$

$$10101101_2 = 1 * 128 + 0 * 64 + 1 * 32 + 0 * 16 + 1 * 8 + 1 * 4 + 0 * 2 + 1 * 1 = 173_{10}$$

HEXADEZIMALSYSTEM

($10_{10}=A_{16}$, $11_{10}=B_{16}$, $12_{10}=C_{16}$, $13_{10}=D_{16}$, $14_{10}=E_{16}$, $15_{10}=F_{16}$)

| | | | | | |
|---------------|--------|--------|--------|--------|--------|
| Stelle | 16^4 | 16^3 | 16^2 | 16^1 | 16^0 |
| Wert | 65536 | 4096 | 256 | 16 | 1 |

$$585_{10} = 2 * 256 + 4 * 16 + 9 * 1 = 249_{16}$$

$$142_{10} = 8 * 16 + 14 * 1 = 8E_{16}$$

$$85C_{16} = 8 * 256 + 5 * 16 + 12 * 1 = 2140_{10}$$

$$B70_{16} = 11 * 256 + 7 * 16 + 0 * 1 = 2928_{10}$$