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<https://github.com/philippschenk2000/gpr/tree/main/gpr3>

**Aufgabe 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Dezimalzahl** | **Binärzahl** | **Hexadezimal** | **Oktal** |
| **262 100000110 406 106** | | | |
| **701 1010111101 2BD 1275** | | | |
| **7034 1101101111010 1b7a 15572** | | | |
| **57 111001 39 71** | | | |

**Rechnungen zu 2 erste Zeile:**

262 /2 131 R0

131 /2 65 R1

65 /2 32 R1

32 /2 16 R0

16 /2 8 R0

8 /2 4 R0

4 /2 2 R0

2 /2 1 R0

1 /2 0 R1

100000110 (reversed)

262 /16 16 R6 = 6

16 /16 1 R0 = 0

0 /16 R1 = 1

0x106

262 /8 32 R6 = 6

32 /8 4 R0 = 0

4 /8 R4 = 4

0o406

**Rechnungen zu 2 zweite Zeile:**

2BD

2 🡪 2

B 🡪 11

D 🡪 13

(2 \* 16²) + (11 \* 16¹) + (13 \* 16⁰) = 701

701 /2 350 R1

350 /2 175 R0

175 /2 87 R1

87 /2 43 R1

43 /2 21 R1

21 /2 10 R1

10 /2 5 R0

5 /2 2 R1

2 /2 1 R0

1 /2 0 R1

1010111101 (reversed)

701 /8 87 R2 = 5

87 /8 10 R7 = 7

10 /8 1 R5 = 2

1 /8 0 R1 = 1

0o1275

**Rechnungen zu 2 dritte Zeile:**

7034 = (1 \* 2¹²) + (1 \* 2¹¹) + (0 \* 2¹⁰) + (1 \* 2⁹) + (1 \* 2⁸) + (0 \* 2⁷) + (1 \* 2⁶) + (1 \* 2⁵) + (1 \* 2⁴) + (1 \* 2³) + (0 \* 2²) + (1 \* 2¹)

7034 /16 439 R10 = A

439 /16 27 R7 = 7

27 /16 1 R11 = B

1 /16 0 R1 = 1

0x1b7a

7034 /8 879 R2 = 2

879 /8 109 R7 = 7

109 /8 13 R5 = 5

13 /8 1 R5 = 5

1 /8 0 R1 = 1

0o15572

**Rechnungen zu 2 vierte Zeile:**

7 \* 8 + 1 = 57

57 /2 28 R1

28 /2 14 R0

14 /2 7 R0

7 /2 3 R1

3 /2 21 R1

1 /2 0 R1

111001 (reversed)

57 /16 3 R9 = 9

3 /16 0 R3 = 3

0x39

**Aufgabe 3**

10111

1\*2^0+1\*2^1+1\*2^2+0+1\*2^4 = 1+2+4+16=23

1001

1+0+0+1\*2^4=9

23 – 9 = 14

49A

4 🡪 4

9 🡪 9

A 🡪 10

(4 \* 16^2) + (9 \* 16^1) + (10 \* 16^0) = 1024 + 144 + 10 = 1178

B4A3

B 🡪 11

4 🡪 4

A 🡪 10

3 🡪 3

(11 \* 16^3) + (4 \* 16^2) + (10 \* 16^1) + (3 \* 16^0) = 45056 + 1024 + 160 + 3 = 46243

46243 + 1178 = 47421

47421 / 16 = 2963 R13 = D

2963 / 16 = 185 R3 = 3

185 / 16 = 11 R9 = 9

11 / 16 = 0 R 11 = B

47421 🡪 B93D