

Aufgabe 6

a)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
1	0	1	0	0	1	1	1	0	1	0

$$\begin{aligned}
 (10100111010)_2 &= (1024 + 256 + 32 + 16 + 8 + 2)_{10} \\
 &= (1338)_{10}
 \end{aligned}$$

b)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
					1	1	1	1	1	0
				1	0	0	0	1	0	1
1	0	0	0	1	0	0	0	0	1	1

$$\begin{aligned}
 (111110)_2 &= (32 + 16 + 8 + 4 + 2)_{10} \\
 &= (62)_{10}
 \end{aligned}$$

$$\begin{aligned}
 (1000101)_2 &= (64 + 4 + 1)_{10} \\
 &= (69)_{10}
 \end{aligned}$$

$$\begin{aligned}
 (10001000011)_2 &= (1024 + 64 + 2 + 1)_{10} \\
 &= (1091)_{10}
 \end{aligned}$$

Aufgabe 7

a)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
							1	1	0	0
					1	1	1	0	0	1

$$(12)_{10} = (8 + 4)_{10}$$

$$= (1100)_2$$

$$(57)_{10} = (32 + 16 + 8 + 1)_{10}$$

$$= (111001)_2$$

b)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
				1	1	0	0	0	1	1
		1	0	0	0	0	0	0	0	0

$$(99)_{10} = (64 + 32 + 2 + 1)_{10}$$

$$= (1100011)_2$$

$$(256)_{10} = (100000000)_2$$

c)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
				1	1	1	0	0	0	0
			1	0	0	1	0	0	0	1

$$(112)_{10} = (64 + 32 + 16)_{10}$$

$$= (1110000)_2$$

$$(145)_{10} = (128 + 16 + 1)_{10}$$

$$= (10010001)_2$$

d)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
		1	0	0	1	0	1	1	0	0
				1	1	1	1	0	0	0

$$(300)_{10} = (256 + 32 + 8 + 4)_{10}$$

$$= (100101100)_2$$

$$(120)_{10} = (64 + 32 + 16 + 8)_{10}$$

$$= (1111000)_2$$

e)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
				1	1	0	1	1	1	1
				1	1	1	1	1	0	0

$$(111)_{10} = (64 + 32 + 8 + 4 + 2 + 1)_{10}$$

$$= (1101111)_2$$

$$(124)_{10} = (64 + 32 + 16 + 8 + 4)_{10}$$

$$= (1111100)_2$$

f)

1024er	512er	256er	128er	64er	32er	16er	8er	4er	2er	1er
1	1	1	1	1	0	1	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0

$$(2000)_{10} = (1024 + 512 + 256 + 128 + 64 + 16)_{10}$$

$$= (11111010000)_2$$

$$(1024)_{10} = (10000000000)_2$$