

$$\begin{array}{c} 4096 \\ 256 \\ 16 \\ 1 \end{array} \begin{array}{c} 2 \\ B \\ A \\ D \end{array} |_{16} = ? |_{10} = 11181 |_{10}$$

$$D \times 1 = 13 \times 1 = 13$$

$$A \times 16 = 10 \times 16 = 160$$

$$B \times 256 = 11 \times 256 = 2816$$

$$2 \times 4096 = 8192$$

$$\hline 11181$$

5/9

$$64206 |_{10} = ? |_{16} = \text{FACE} |_{16}$$

~~15101214~~

BASE
CONVERTING
TO

$$16 \overline{) 64206}$$

$$16 \overline{) 4012}$$

$$16 \overline{) 250}$$

$$16 \overline{) 15}$$

$$16 \overline{) 0}$$

0

$$R_{14} \quad (E)$$

$$R_{12} \quad (C)$$

$$R_{10} \quad (A)$$

$$R_{15} \quad (F)$$

R0

$${}_{49}^{71} |_{7} = ? |_{9}$$

$$\begin{array}{r} 45 \\ 73 \\ 62 \\ 66 \end{array}$$

$$\begin{array}{r} 3 \times 1 \quad 3 \\ 2 \times 7 \quad 14 \\ 1 \times 49 \quad 49 \\ \hline 66 \end{array}$$

$$\begin{array}{r} 9 \overline{)66} \\ 9 \overline{)7} \quad R3 \\ \hline 0 \quad R7 \end{array} \quad \uparrow \quad 73 |_{9}$$

$$123 |_{7} = 66 |_{10}$$

10 Dec	2 Binary	8 Octal	16 Hex
0	0000	0	0
1	0001	1	1
2	0010	2	2
3	0011	3	3
4	0100	4	4
5	0101	5	5
6	0110	6	6
7	0111	7	7
8	1000		8
9	1001		9
10	1010		A
11	1011		B
12	1100		C
13	1101		D
14	1110		E
15	1111		F

11001001
 C 9

Convert FACE₁₆ to base 2

F A C E
 1111 1010 1100 1110

00000000
 9 E

10 Dec	2 Binary	8 Octal	16 Hex
0	0000	0	0
1	0001	1	1
2	0010	2	2
3	0011	3	3
4	0100	4	4
5	0101	5	5
6	0110	6	6
7	0111	7	7
8	1000		8
9	1001		9
10	1010		A
11	1011		B
12	1100		C
13	1101		D
14	1110		E
15	1111		F

$$2743|_8 = ?|_2$$

010 111 100 011

~~$$101101110110001|_2 = ?|_8$$

5 5 6 7 0 1~~

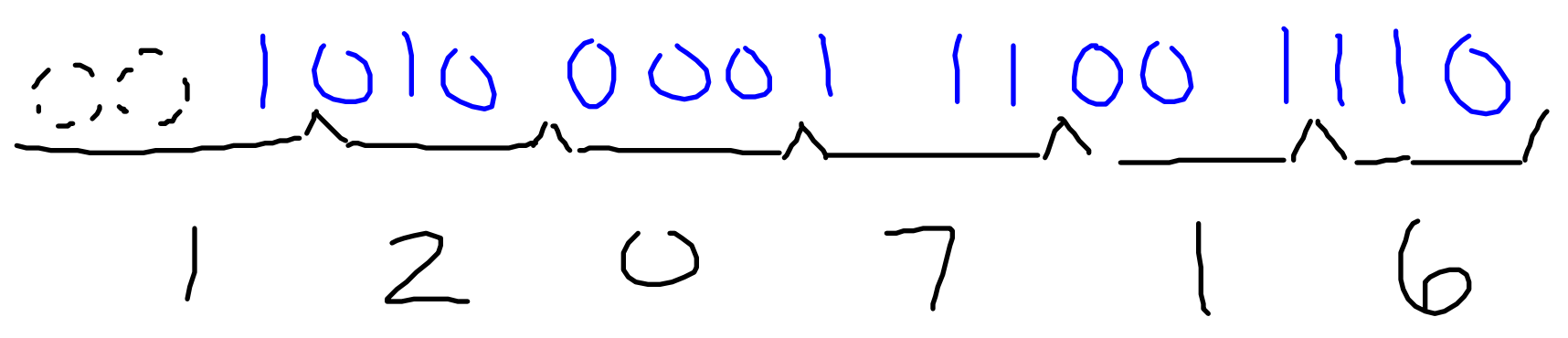
$$101101110110001|_2 = ?|_8$$

1 3 3 5 6 1

10 Dec	2 Binary	8 Octal	16 Hex
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8	1000		8
9	1001		9
10	1010		A
11	1011		B
12	1100		C
13	1101		D
14	1110		E
15	1111		F

$A1CE_{16} = ?_8$

120716



Counting in other bases

Count in base 4

0, 1, 2, 3, 10, 11, 12, 13,

20, 21, 22, 23, 30, 31, 32, 33,

100, 101 -

Bit - BINARY Digit (0 or 1)

8 bits - Byte

4 bits - Nibble

word/double - machine dependant

PC word = 64 bits

ATMega boards word = 8 bits