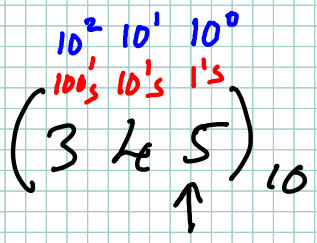


$$\begin{array}{r} 19 \\ +\ 1 \\ \hline 10 \end{array}$$

0
1
2
3
4
5
6
7
8
9
10
11

$6^3\ \ 6^2\ 6^1\ 6^0$
216's 36's 6's 1's
$(345)_6$

$3 \times 6^2 = 3 \times 36 = 108$

$4 \times 6^1 = 4 \times 6 = 24$

$5 \times 6^0 = 5 \times 1 = 5$

$(137)_{10}$

1

$$\begin{array}{r} 137 \\ 108 \\ \hline 29 \\ 24 \\ \hline 5 \end{array}$$

BASE 6

$$\begin{array}{r} 1\ 5 \\ +\ 1 \\ \hline 1\ 0 \end{array}$$

0
1
2
3
4
5

$(10)_6 \leftarrow (6)_{10}$

$(345)_6$

BYTE

NIBBLE

2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0

128's 64's 32's 16's 8's 4's 2's 1's

$(1011\ 1101)_2$

$$\begin{array}{r} 128 \\ 32 \\ 16 \\ 8 \\ 4 \\ 1 \\ \hline (189)_{10} \end{array}$$

128	64	32	16	8	4	2	1
1	0	1	1	1	1	0	1

$$\begin{array}{r} 189 \\ -128 \\ \hline 61 \\ -32 \\ \hline 29 \\ 16 \\ \hline 13 \end{array} \qquad \begin{array}{r} 13 \\ -8 \\ \hline 5 \\ -4 \\ \hline 1 \\ -1 \\ \hline 0 \end{array}$$

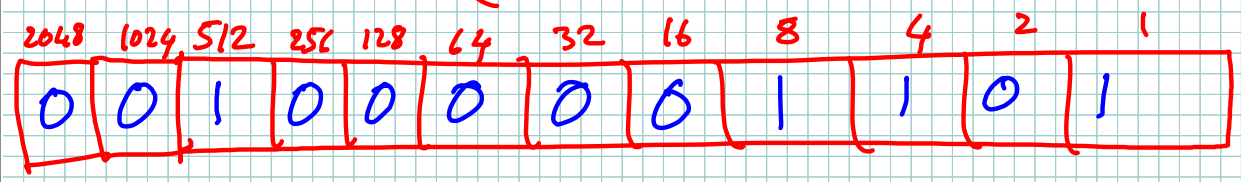
BINARY

0

1

$$\begin{array}{r} 0 \\ +0 \\ \hline 0 \end{array} \qquad \begin{array}{r} 0 \\ +1 \\ \hline 1 \end{array} \qquad \begin{array}{r} 1 \\ +1 \\ \hline 10 \end{array}$$

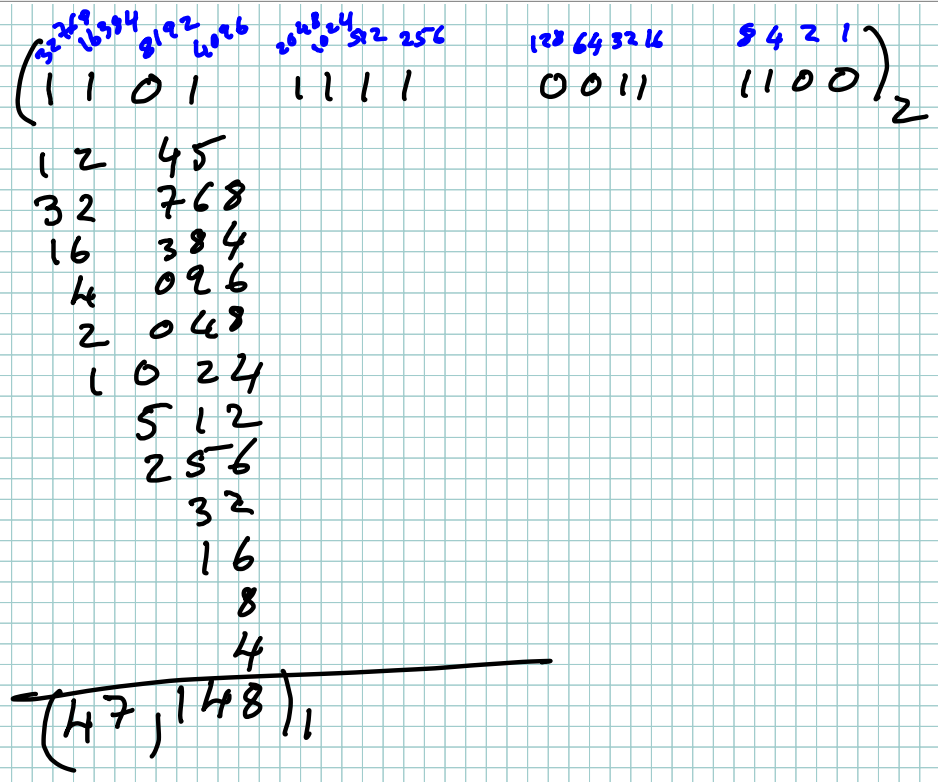
$(525)_{10}$

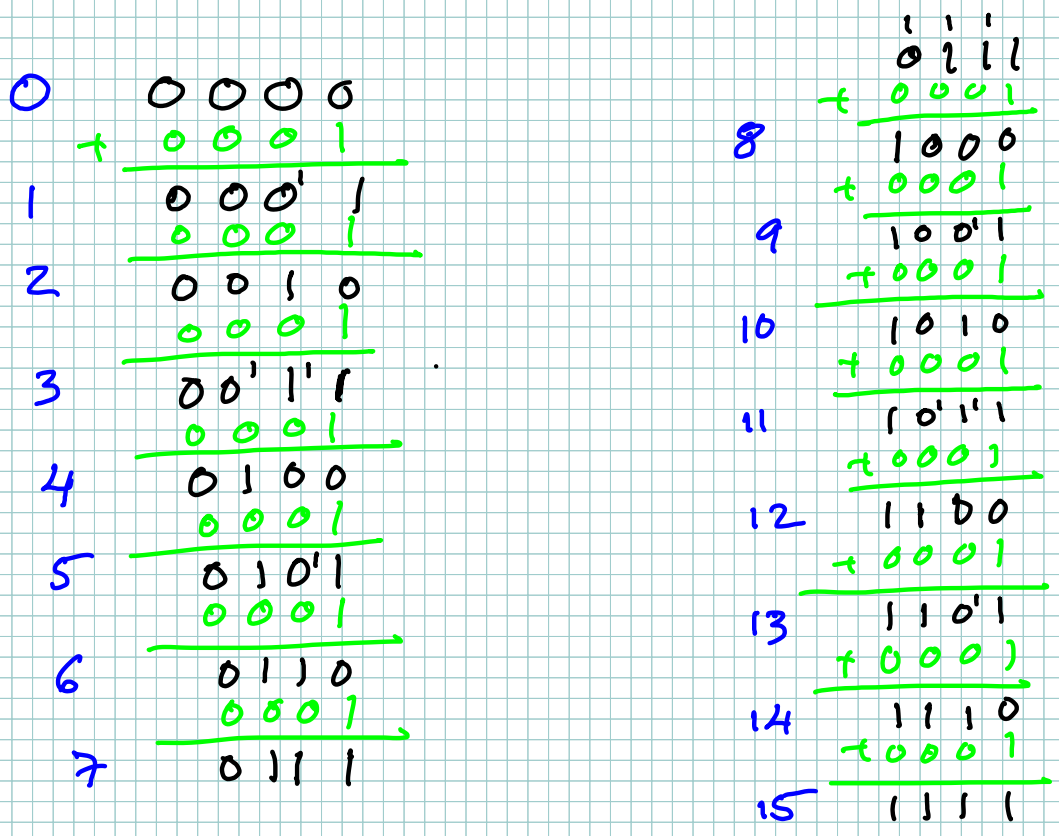


525
512
13
8
5
4
1

0010 0000 1101

$(0010\ 0000\ 1101)_2$


(1101 1111 0011 1100)2
1 2 4 5
3 2 7 6 8
1 6 3 8 4
4 0 9 6
2 0 4 8
1 0 2 4
5 1 2
2 5 6
3 2
1 6
8
4
(47, 148)1


0 0 0 0 0
+ 0 0 0 1
1 0 0 0 1 1
+ 0 0 0 1
2 0 0 1 0
+ 0 0 0 1
3 0 0 1 1 1
+ 0 0 0 1
4 0 1 0 0
+ 0 0 0 1
5 0 1 0 1
+ 0 0 0 1
6 0 1 1 0
+ 0 0 0 1
7 0 1 1 1
1 1 1
0 1 1 1
+ 0 0 0 1
8 1 0 0 0
+ 0 0 0 1
9 1 0 0 1
+ 0 0 0 1
10 1 0 1 0
+ 0 0 0 1
11 1 0 1 1 1
+ 0 0 0 1
12 1 1 0 0
+ 0 0 0 1
13 1 1 0 1
+ 0 0 0 1
14 1 1 1 0
+ 0 0 0 1
15 1 1 1 1

0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
~~7~~	~~7~~	0111
8	8	1000
9	9	1001
10	A	1010 ABLE
11	B	1011 BAKER
12	C	1100 CHARLIE
13	D	1101 DOG
14	E	1110 EASY
15	F	1111 FOX

16^4 16^3 16^2 16^1 16^0

$16^4 = 65536$ $16^3 = 4096$ $16^2 = 256$ $16^1 = 16$ $16^0 = 1$

$(BFC3)_{16}$

1011 1111 1100 0011

B F C 3

$4096 \times B = 4096 \times 11 = 45,056$

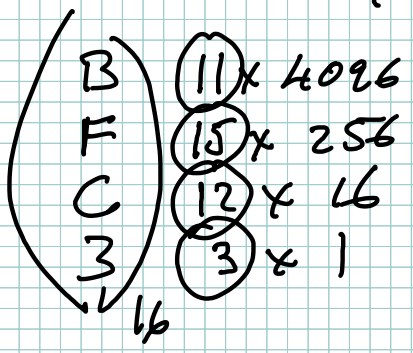
$256 \times F = 256 \times 15 = 3,840$

$16 \times C = 16 \times 12 = 192$

$1 \times 3 = 1 \times 3 = 3$

$49,091$

.49,091



NERDCALC

$(85,022)_{10}$

$(0509\underline{26})_{16}$