NO. Lauron, John

DATE 9/3/23

Information Recall | Number Systems Solutions

1- $57ED_{16}$

Decimal = $(5 \times 16^3) + (7 \times 16^2) + (14 \times 16^1) + (13 \times 16^0)$

= 20480 + 1792 + 224 + 13

= **22509**

Binary =

22509	÷ 2	= 11254	r = 1
11254	÷ 2	= 5627	r = 0
5627	÷ 2	= 2813	r = 1
2813	÷ 2	= 1406	r = 1
1406	÷ 2	= 703	r = 0
703	÷ 2	= 351	r = 1
351	÷ 2	= 175	r = 1
175	÷ 2	= 87	r = 1
87	÷ 2	= 43	r = 1
43	÷ 2	= 21	r = 1
21	÷ 2	= 10	r = 1
10	÷ 2	= 5	r = 0
5	÷ 2	= 2	r = 1
2	÷ 2	= 1	r = 0
1	÷ 2	= 0	r = 1

Binary = **1010111111101101**

ORIONS

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2. 14082_{10}

Hexadecimal : 14062 ÷ 16 = 880 r = 2
880 ÷ 16 = 55 r = 0
55 ÷ 16 = 3 r = 7
3 ÷ 16 = 0.1875 r = 3

Hexadecimal = 3702_{16}

Binary = 14082 ÷ 2 = 7041 r = 0
7041 ÷ 2 = 3520 r = 1
3520 ÷ 2 = 1760 r = 0
1760 ÷ 2 = 880 r = 0
880 ÷ 2 = 440 r = 0
440 ÷ 2 = 220 r = 0
220 ÷ 2 = 110 r = 0
110 ÷ 2 = 55 r = 0
55 ÷ 2 = 27 r = 1
27 ÷ 2 = 13 r = 1
13 ÷ 2 = 6 r = 1
6 ÷ 2 = 3 r = 0
3 ÷ 2 = 1 r = 1
1 ÷ 2 = 0 r = 1

Binary = 11011100000010

ORIONS

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3. 110011001000

Hexadecimal : 1100 1100 1000 = CC8
C C 8

Decimal :

110011001000

$0 \times 2^0 = 0$
$0 \times 2^1 = 0$
$0 \times 2^2 = 0$
$1 \times 2^3 = 8$
$0 \times 2^4 = 0$
$0 \times 2^5 = 0$
$1 \times 2^6 = 64$
$1 \times 2^7 = 128$
$0 \times 2^8 = 0$
$0 \times 2^9 = 0$
$1 \times 2^{10} = 1024$
$1 \times 2^{11} = 2048$

$2048 + 1024 + 128 + 64 + 8 = 3272_{10}$

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4. (a) $8D4_{16} + 2EC_{16} = C8F_{16}$

2,

$8D4_{16}$ C = 12

$+ 2EC_{16}$ D = 13

E = 14

C4F

(b) $D38_{16} - 40E_{16} = 924_{16}$

2

D38

$-$ 40E

924

5. (a) $1111011_2 + 1100010_2 = 10100111012$

1 1

1111011

$+$ 1100010 = 10100111012

010100111012

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(b) $1101101_2 - 1011000_2 = 1101010_2$

$$\begin{array}{r} 1101101 \\ -\ 1011000 \\ \hline 0101010 \end{array} = 1101010$$