Aritmética Computacional - AOC1
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(1.a) 1111 1111 1111 1111 1111 1111 0000 0110

0000 0000 0000 0000 0000 0000 1111 1001

$$+ 1$$

1111 1010

$$0 \cdot 2^0 + 1 \cdot 2^1 + 0 \cdot 2^2 + 1 \cdot 2^3 + 1 \cdot 2^4 + 1 \cdot 2^5 + 1 \cdot 2^6 + 1 \cdot 2^7$$

$$0 + 2 + 0 + 8 + 16 + 32 + 64 + 128 = \boxed{250}$$

b) 1111 1111 1111 1111 1111 1111 1110 1111

0000 0000 0000 0000 0000 0000 0001 0000

$$+ 1$$

$$1 \cdot 2^0 + 0 \cdot 2^1 + 0 \cdot 2^2 + 0 \cdot 2^3 + 1 \cdot 2^4 = \boxed{17} \qquad 1 \ 0001$$

c)

(2.)
46 |2	101110
0 23 |2	010001
1 11 |2	$+ 1$
1 5 |2	010010
1 2 |2	
0 1	0000 0000 0001 0010

(3.) 1010 1101 0001 0000 0000 0000 0000 0010

a) 0101 0010 1110 1111 1111 1111 1111 1101
                                        +1
0101 0010 1110 1111 1111 1111 1111 1110

b)

(4.) 3-5 = -2 (1110)
3 → 0011   0011
5 → 0101   1010   + 1011
                 +1   1110
               1011

(5.) 3-6 = -3 (1101)
3 → 0011   0011
6 → 0110   1001   + 1010
                 +1   1101
               1010

6) a) $6 \cdot 5 = 30$

$$\begin{array}{r} 110 \\ \times 101 \end{array}$$

$6 \rightarrow 0110$

$5 \rightarrow 0101$

$$\begin{array}{r} 110 \\ 000 \\ 110 \end{array}$$

$30 = 11110$

b) $7 \cdot 9 = 63$

$$\begin{array}{r} 0111 \\ \times 1001 \end{array}$$

$7 \rightarrow 0111$

$9 \rightarrow 1001$

$$\begin{array}{r} 0111 \\ 0000 \\ 0000 \\ 0111 \end{array}$$

$63 = 111111$

7) a) $10011_2 = 13_{10}$

$$\begin{array}{r} 01100 \\ + 1 \\ \hline 01101 \end{array}$$

b) $-5810 \rightarrow 1001010011110$

$5810 \lfloor 2$

$0 \ 2905 \lfloor 2$

$1 \ 1452 \lfloor 2$

$0 \ 726 \lfloor 2$

$0 \ 363 \lfloor 2$

$1 \ 181 \lfloor 2$

$1 \ 90 \lfloor 2$

$0 \ 45 \lfloor 2$

$1 \ 22 \lfloor 2$

$0 \ 11 \lfloor 2$

$1 \ 5 \lfloor 2$

$1 \ 2 \lfloor 2$

$0 \ 1$

1011010110010

0100101001101

$+ 1$

0100101001110

c) $10101_2 = 11_{10}$ 10101

01010

$+1$

$01011 \to 11_{10}$

d) -5710 10110010011110

01001101100001

$5710 | 2$ $+1$

$0\ 2855 | 2$ 01001101100010

$1\ 1427 | 2$

$1\ 713 | 2$

$1\ 356 | 2$

$0\ 178 | 2$

$0\ 89 | 2$

$1\ 44 | 2$

$0\ 22 | 2$

$0\ 11 | 2$

$1\ 5 | 2$

$1\ 2 | 2$

$0\ 1$

(8) a) $1\ 00111$ $100010_2 = \boxed{-34_{10}}$

$1\ 11011$

1100010

b) $0\ 11001$ $10010_2 = \boxed{18_{10}}$

$1\ 00111$

$0\ 10010$