CS1203

Assignment 2

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"I warrant that his is my own work"

1)   7   5   0   3
            (111)   (101)   (000)   (011)

            1111   0100   0011
            F   4   3

2)   9   C   3   B
            (1001)   (1100)   (0011)   (1011)

            (001)   (001)   (110)   (000)   (111)   (011)
            1   1   6   0   7   3

3)   a)   (001)   (011)   (010)   (111)
                1   3   2   7

        b)   (0010) (1101) (0111)
                2   D   7

4)   a)   1101101 -> 1 + 4 + 8 + 32 + 64 = 109
        b)   A57B -> 11 + 7*16 + 5 * 16^2 + 10 * 16^3 = 42363
        c)   3725 -> 5 + 2*8 + 7*8^2 + 3*8^3 = 2005

5.   75 -> = 64 + 11
                    64 + 8 + 3
                    64 + 8 + 2 + 1 -> 1001011

6.   1297 -> 1297 MOD 8 = 162 R=1

                                162 MOD 8 = 20 R =2

                                20 MOD 8 = 2 R=4

                                2 MOD 8 = 0 R 2

The remainders are the converted octal places so it would be 2421

7.   2029 -> 2029 MOD 16 = 126 R = 13

                                126 MOD 16 = 7 R = 14

                                7 MOD 16 = 0 R=7

The remainders are in decimal so then convert to hex

7   14   13

7   E   D

8.   624 -> 6   2   4

                              $6*7^2 + 2*7 + 4*1 = 312$

9.   921 -> 921 MOD 14 = 65 R=11

                                65 MOD 14 = 4 R=9

                                4 MOD 14 = 0 R=4

49B

10. a) 27AC + 385

          1 1
          27AC
        + 385
          2B42

              F   11
    b) 2035 − 14C   1 10 2 14
                      2 0   3 5
                    -    1   4 C
                      1   E D 8

                  1 1
11. a) 574 + 116   5 7 4
                    + 1 1 6
                      7 1 3

                      10
                      4 0 13
    b) 513 − 257   5 1 3
                    - 2 5 7
                      2 3 3

1 1 1

12.   a)   101101 + 11110   1 0 1 1 0 1

                                                + 1 1 1 1 0

                                                1 0 0 1 0 1 1

                                                 1   10

                                                ~~10~~ 10 0   ~~0~~ 10

       b)   1001101 – 10111   ~~1~~ 0 0 ~~1~~ ~~1~~ 0 1

                                                -      1 0 1 1 1

                                                 1 1 0 1 1 0

When you carry back a "10" You basically have 2 1's in that slot, so when you take away one you end up with a one there in the end.