Introdução à Informática
AP1 /2013_1°

2)a). $(1110.0101)_{10} = (10001010110.000000010100\dots)_2$

(above the binary number, column markers: 10 9 8 7 6 5 4 3 2 1 0 -1 -2 --- 110)

$0.0101 \times 2 = 0.0202 \to A_{-1} = 0$

$0.0202 \times 2 = 0.0404 \to A_{-2} = 0$

$0.0404 \times 2 = 0.0808 \to A_{-3} = 0$

$0.0808 \times 2 = 0.1616 \to A_{-4} = 0$

$0.1616 \times 2 = 0.3232 \to A_{-5} = 0$

$0.3232 \times 2 = 0.6464 \to A_{-6} = 0$

$0.6464 \times 2 = 1.2928 \to A_{-7} = 1$

$0.2928 \times 2 = 0.5856 \to A_{-8} = 0$

$0.5856 \times 2 = 1.1712 \to A_{-9} = 1$

$0.1712 \times 2 = 0.3424 \to A_{-10} = 0$

$0.3424 \times 2 = 0.6848 \to A_{-11} = 0$

$0.6848 \times 2 = 1.3696 \to A_{-12} = 1$

$= (2126.0051\dots)_8$

b) $(6678553.05716)_9 = (20202122121210.001221012)_3$

c)

```
768637 |9
068      108856 |7
  66       28      13758 |7
   43       58       57     1746 |7
    47       45       35      24    232 |7
     1        66       48      16   02 30 |7
               4        2       1    2   6  3 |7
                                         3  0
```

$(768637)_9 = (3621241)_7$

d) $(6505714.1107)_8 = (110101001000101011001100.001001000111)_2$

$= (1222023030.021013)_4 = (1A8BCC.247)_{16}$

e) $(CFD09.B7E)_{16} = (30333100021.231332)_4 =$

$= (11001111110100000100101.101110111111)_2 =$

$= (3176411.5576)_8$

3)a) $FDE9CCA.BD9_{16}$
+ $EFD9A1C.BAF3_{16}$
$(1EDC36E7.7883)_{16}$

b) 7000011.031_9
− 6718758.7865_9
$(170141.1334)_9$

c) 1011102.071_{16}
− $FAB5AD.99AC_{16}$
$(65B54.6D64)_{16}$

d)
$1\ 1\ 1010\ 1\ 1\ 1010\ 1010\ 1010\quad 1\ 1\ 1\ 1$
11001010011.1101_2
101111010101.10111_2
+ 101110111.11001_2
$(11110011001.0101)_2$

e) 100010010101.0101_2
− 111010111.10111_2
$(100110110.10011)_2$