INTRODUÇÃO À INFORMÁTICA (1)

AD1 – 1º SEMESTRE DE 2013

3.) a) $(1111.0101)_{10} =$

1024 + 64 = 1088; 1088 + 16 = 1104

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

0.0101 × 2 = 0.0202 → $\Delta_{-1} = 0$
0.0202 × 2 = 0.0404 → $\Delta_{-2} = 0$
0.0404 × 2 = 0.0808 → $\Delta_{-3} = 0$
0.0808 × 2 = 0.1616 → $\Delta_{-4} = 0$
0.1616 × 2 = 0.3232 → $\Delta_{-5} = 0$
0.3232 × 2 = 0.6464 → $\Delta_{-6} = 0$
0.6464 × 2 = 1.2928 → $\Delta_{-7} = 1$
0.2928 × 2 = 0.5856 → $\Delta_{-8} = 0$
0.5856 × 2 = 1.1712 → $\Delta_{-9} = 1$
0.1712 × 2 = 0.3424 → $\Delta_{-10} = 0$
0.3424 × 2 = ...

$= (10001010111.0000001010...)_2 =$
$= (101113.00022...)_4$

b) $(7785366.0757)_9 = (2121221210202 0.0021 1221)_3$

c) $(5756205)_8 = (53303421)_6$

5756205₈ ÷ 6 = 775026, resto 1
775026 ÷ 6 = 124656, resto 2
124656 ÷ 6 = 16107, resto 4
16107 ÷ 6 = 2266, resto 3
2266 ÷ 6 = 311, resto 0
311 ÷ 6 = 41, resto 3
41 ÷ 6 = 5, resto 3
5 ÷ 6 = 0, resto 5

d) $(E9CA59.FCA7)_{16} =$
$= (111010011100101001011001.1111110010100111)_2$
$= (72345131.771234)_8$

e) $(320320103.233302)_4 =$
$= (111000111000010011.101111110010)_2$
$= (707023.5762)_8$

(2)

4. a) $AEF7D.C9B_{16} + 9CCD.ED8_{16} = (B8C4B.B73)_{16}$

b) $775635.7625_8 + 766701.5244_8 = (1764537.5071)_8$

c) $1101E0.0A_{16} - FCDAC.AEB_{16} = (13433.5B5)_{16}$

d) $100101110011.101_2 + 10110111101.1001_2 = (1111001 0001.0011)_2$

e) $101001100.1001_2 - 10111001.11001_2 = (10010010.11001)_2$

5. $x = -(63)_{16} = -(99)_{10} = -(01100011) = 1001\ 1101$ COMPL à 2

$y = -(21)_{16} = -(33)_{10} = -(00100001) = 1101\ 1111$

a)
```
  1001 1101    -63
+ 1101 1111    -21
-----------
 10111 1100    Devia -(84)16 = -(132)10
OVERFLOW!
```

b)
```
  10011101    -63
- 00100001    -(-21)
----------
  10111110    -(42)16 = -(01000010) = -(66)10
```

c)
```
  11011111    -(21)
- 01100011    -(-63)
-----------
 1)01000010   +(42)16 = +(66)10
```

d)
```
 1100011 | 100001
 100001  |--------
 -------   11       = +(03)16 = +(03)10
 100001
      0
```