AD1 - 2ºsem/17

1

3) a) $(1001.111)_{10} = (1111110101001.0001110001...)_2$

(Digit positions written above: 9 8 7 6 5 4 3 2 1 0)

$0.111 \times 2 = 0.222 \rightarrow \Delta_1 = 0$
$0.222 \times 2 = 0.444 \rightarrow \Delta_2 = 0$
$0.444 \times 2 = 0.888 \rightarrow \Delta_{-3} = 0$
$0.888 \times 2 = 1.776 \rightarrow \Delta_{-4} = 1$
$0.776 \times 2 = 1.552 \rightarrow \Delta_{-5} = 1$

$0.552 \times 2 = 1.104 \rightarrow \Delta_{-6} = 1$
$0.104 \times 2 = 0.208 \rightarrow \Delta_{-7} = 0$
$0.208 \times 2 = 0.416 \rightarrow \Delta_{-8} = 0$
$0.416 \times 2 = 0.832 \rightarrow \Delta_{-9} = 0$
$0.832 \times 2 = 1.664 \rightarrow \Delta_{-10} = 1$

512 - 9
+256 - 8
768
+128 - 7
896
+64 - 6
960
+32 - 5
992
+8 - 3
1000
+1 - 0
1001

$= (33221.01301...)_4$

b) $(76085734.707683)_9 =$
$= (212000221221101 1.2100212022 1)_3$

c) $(66056)_8 = (?)_6 = (332114)_6$

66056 | 6
00 56 | 11007 | 6
4 30 | 1401 | 6
007 | 200 | 6
1 | 1 | 40 | 25 | 6
2 | 3 | 3 | 6
3 | 0

d) $(77074036.04737)_8 =$
$= 111111100011111000000011110.000100111011111)_2$
$= (FC781E.13BE)_{16} =$
$= (3330132001 32.01032332)_4$

e) $(3313302 22.112320323)_4 =$
$= (3DF2A.5B8EC)_{16} =$
$= (111101111100101010.0101101110001110 11)_2$

(4) a) $FFC7D91B.E874A_{16}$
$+ \quad EDB8ECC.DC01E9_{16}$
$(10EA367E8.C47689)_{16}$

b) $63662545 4.536546_7$
$+ \quad 61655046.526635_7$
$(1031613534.366514)_7$

c) 1001110.009_{16}
$- \quad ECDB9C.A9BE_{16}$
$(133573.56D2)_{16}$

d) 1101011111110.10011_2
$+ \quad 1100111011111.1111_2$
$(1101001101110.10001)_2$

e) 1000010011.1001_2
$- \quad 1110101010.101111$
$(0011110 0.110101)_2$

(5) $X = -(4F)_{16} = -(79)_{10} = -(01001111)_2$
$Y = +(33)_{16} = +(51)_{10} = +(00110011)_2$

a) $X+Y \rightarrow 10110001$ (X em comp. a 2)
$+ \quad 00110011$ (Y normal)
$11100100 = -(00011100)_2 = -(1C)_{16} =$
$= -(28)_{10}$

b) $X-Y \rightarrow 10110001$
$+ \quad 11001101$ (comp. a 2 de Y)
101111110 Dados $-(1000001 0)_2 =$
overflow!
$= -(130)_{10} = -(82)_{16}$

c) $Y-X \rightarrow 00110011$
$+ \quad 01001111$ (X descomplementado a 2)
10000010 Dados $+(10000010)_2 =$
overflow!
$= +(130)_{10} = +(82)_{16}$