Benejnec Adrian - Daniel

Tema 1 AC

1.1

a) $119,345_{(10)}$

119	2	r 1
59	2	r 1
29	2	r 1
14	2	r 0
7	2	r 1
3	2	r 1
1	2	r 1
0		

$\Rightarrow 119_{(10)} = 1110111_{(2)}$

$0,345 \cdot 2 = 0,69$
$0,69 \cdot 2 = 1,38$
$0,38 \cdot 2 = 0,76$
$0,76 \cdot 2 = 1,52$
$0,52 \cdot 2 = 1,04$
$0,04 \cdot 2 = 0,08$
$0,08 \cdot 2 = 0,16$
$0,16 \cdot 2 = 0,32$
$0,32 \cdot 2 = 0,64$
$0,64 \cdot 2 = 1,28$
$0,28 \cdot 2 = 0,56$
$0,56 \cdot 2 = 1,12$

$\Rightarrow$

$\Rightarrow 0,345_{(10)} = 0101100000101_{(2)}$

$\Rightarrow 119,345_{(10)} = 1110111.0101100000101_{(2)}$

În octal: 001 110 111 . 010 110 000 101 $\Rightarrow 167,2605_{(8)}$

1 6 7 . 2 6 0 5

În hexa: 0111 0111 . 0101 1000 0101 $\Rightarrow 77,585_{(16)}$

7 7 . 5 8 5

h) $200,08_{(10)}$

200	2	r 0
100	2	r 0
50	2	r 0
25	2	r 1
12	2	r 0
6	2	r 0
3	2	r 1
1	2	r 1
0		

$\Rightarrow 200_{(10)} = 11001000_{(2)}$

$0,08 \cdot 2 = 0,16$
$0,16 \cdot 2 = 0,32$
$0,32 \cdot 2 = 0,64$
$0,64 \cdot 2 = 1,28$
$0,28 \cdot 2 = 0,56$
$0,56 \cdot 2 = 1,12$

$0,12 \cdot 2 = 0,24$
$0,24 \cdot 2 = 0,48$
$0,48 \cdot 2 = 0,96$
$0,96 \cdot 2 = 1,92$
$0,92 \cdot 2 = 1,84$
$0,84 \cdot 2 = 1,68$

$\Rightarrow 0,08_{(10)} = 000101000111_{(2)}$

$\Rightarrow 200,08_{(10)} = 11001000.000101000111_{(2)}$

In octal: $\underbrace{011}_{3}\underbrace{001}_{1}\underbrace{000}_{0}.\underbrace{000}_{0}\underbrace{101}_{5}\underbrace{000}_{0}\underbrace{111}_{7} \Rightarrow 310,0507_{(8)}$

In hexa: $\underbrace{1100}_{C}\underbrace{1000}_{8}.\underbrace{0001}_{1}\underbrace{0001}_{4}\underbrace{1100}_{7} \Rightarrow C8,147_{(16)}$

c) $108,932_{(10)}$

108	2	r 0
54	2	r 0
27	2	r 1
13	2	r 1
6	2	r 0
3	2	r 1
1	2	r 1
0		

$\Rightarrow 108_{(10)} = 1101100_{(2)}$

$0,932 \cdot 2 = 1,864$
$0,864 \cdot 2 = 1,728$
$0,728 \cdot 2 = 1,456$
$0,456 \cdot 2 = 0,912$
$0,912 \cdot 2 = 1,824$
$0,824 \cdot 2 = 1,648$

$0,648 \cdot 2 = 1,296$
$0,296 \cdot 2 = 0,592$
$0,592 \cdot 2 = 1,184$
$0,184 \cdot 2 = 0,368$
$0,368 \cdot 2 = 0,736$
$0,736 \cdot 2 = 1,472$

$\Rightarrow 1110111101001_{(2)}$

$\Rightarrow 108,932_{(10)} = 1101100,1110111101001_{(2)}$

In octal: $\underbrace{001}_{1}\underbrace{101}_{5}\underbrace{100}_{4}, \underbrace{111}_{7}\underbrace{011}_{3}\underbrace{101}_{5}\underbrace{001}_{1}$ $\Rightarrow 154,7351_{(8)}$

In hexa: $\underbrace{0110}_{6}\underbrace{1100}_{C}, \underbrace{1110}_{E}\underbrace{1110}_{E}\underbrace{1001}_{9}$ $\Rightarrow 6C,EE9_{(16)}$

d) $245,115_{(10)}$

245	2	r 1
122	2	r 0
61	2	r 1
30	2	r 0
15	2	r 1
7	2	r 1
3	2	r 1
1	2	r 1
0		

$\Rightarrow 245_{(10)} = 11110101_{(2)}$

$0,115 \cdot 2 = 0,230$
$0,230 \cdot 2 = 0,460$
$0,460 \cdot 2 = 0,920$
$0,920 \cdot 2 = 1,840$
$0,840 \cdot 2 = 1,680$
$0,680 \cdot 2 = 1,360$

$0,360 \cdot 2 = 0,720$
$0,720 \cdot 2 = 1,440$
$0,440 \cdot 2 = 0,880$
$0,880 \cdot 2 = 1,760$
$0,760 \cdot 2 = 1,520$
$0,520 \cdot 2 = 1,040$

$\Rightarrow 000111010111_{(2)}$

$\Rightarrow$ ~~$245,115_{(10)} = 000111010111_{(2)}$~~

$\Rightarrow 245,115_{(10)} = 11110101.000111010111_{(2)}$

In octal: $\underbrace{011}_{3}\underbrace{110101}_{6\ 5}.\underbrace{000}_{0}\underbrace{111}_{7}\underbrace{010}_{2}\underbrace{111}_{7}$ $\Rightarrow 365,0727_{(8)}$

In hexa: $\underbrace{1111}_{F}\underbrace{0101}_{5}.\underbrace{0001}_{1}\underbrace{1101}_{D}\underbrace{0111}_{7}$ $\Rightarrow F5,1D7_{(16)}$

e) $406,422_{(10)}$

406	2	r 0
203	2	r 1
101	2	r 1
50	2	r 0
25	2	r 1
12	2	r 0
6	2	r 0
3	2	r 1
1	2	r 1
0		

$\Rightarrow 406_{(10)} = 110010110_{(2)}$

$0,422 \cdot 2 = 0,844$
$0,844 \cdot 2 = 1,688$
$0,688 \cdot 2 = 1,376$
$0,376 \cdot 2 = 0,752$
$0,752 \cdot 2 = 1,504$
$0,504 \cdot 2 = 1,008$

$0,008 \cdot 2 = 0,016$
$0,016 \cdot 2 = 0,032$
$0,032 \cdot 2 = 0,064$
$0,064 \cdot 2 = 0,128$
$0,128 \cdot 2 = 0,256$
$0,256 \cdot 2 = 0,512$

$\Rightarrow 011011000000_{(2)}$

$\Rightarrow 406,422_{(10)} = 110010110.011011000000_{(2)}$

In octal: $\underbrace{110}_{6}\underbrace{010}_{2}\underbrace{110}_{6}.\underbrace{011}_{3}\underbrace{011}_{3}\underbrace{000}_{0}\underbrace{000}_{0}$ $\Rightarrow 626,33_{(8)}$

In hexa: $\underbrace{1100}_{C}\underbrace{1011}_{B}0.\underbrace{0110}_{6}\underbrace{1100}_{C}\underbrace{0000}_{0}$ $\Rightarrow 196,6C0_{(16)}$