CIOLTEA MIHAI ROBERT

TEMA AC

a) $119,345_{(10)} = 119_{(10)} + 0,345_{(10)}$ =

$119 : 2 = 59$ r 1
$59 : 2 = 29$ r 1
$29 : 2 = 14$ r 1
$14 : 2 = 7$ r 0
$7 : 2 = 3$ r 1
$3 : 2 = 1$ r 1
$1 : 2 = 0$ r 1

$0,345 \cdot 2 = 0,69$
$0,69 \cdot 2 = 1,38$
$0,38 \cdot 2 = 0,76$
$0,76 \cdot 2 = 1,52$
$0,52 \cdot 2 = 1,039$
$0,03 \cdot 2 = 0,079$
$0,079 \cdot 2 = 0,16$
$0,16 \cdot 2 = 0,319$
$0,319 \cdot 2 = 0,639$
$0,639 \cdot 2 = 1,279$

$\Rightarrow 119,345_{(10)} = 1110111.0101100001_{(2)}$

$001110111.010110000100_{(2)} = 167.2604_{(8)}$
(1 6 7 2 6 0 4)

$01110111.01011000100_{(2)} = 77.588_{(16)}$
(7 7 5 8 8)

b) $200,08_{(10)} = 200_{(10)} + 0,08_{(10)}$

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

0,08 · 2 = 0,16
0,16 · 2 = 0,32
0,32 · 2 = 0,64
0,64 · 2 = 1,28
0,28 · 2 = 0,56
0,56 · 2 = 1,12
0,12 · 2 = 0,24
0,24 · 2 = 0,48
0,48 · 2 = 0,96
0,96 · 2 = 1,92.

$200,08_{(10)} = 11001000.0001\,0\,0\,0001_{(2)}$

$011\,001\,000 \cdot 000\,101\,000_{(2)} = 310,050_{(8)}$
3 1 0 0 5 0

$1100\,1000,0001\,0100_{(2)} = C8.14_{(16)}$
C 8 1 4

c) $108.932_{(10)} = 108_{(10)} + 0,932_{(10)}$

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

$0.932 \cdot 2 = 1,864$
$0,864 \cdot 2 = 1,728$
$0,728 \cdot 2 = 1,456$
$0,456 \cdot 2 = 0,912$
$0,912 \cdot 2 = 1,824$
$0,824 \cdot 2 = 1,648$
$0,648 \cdot 2 = 1,296$
$0,296 \cdot 2 = 0,592$
$0,592 \cdot 2 = 1,184$
$0,184 \cdot 2 = 0,368$

$\Rightarrow 108.932_{(10)} = 1101100.111011101010_{(2)}$

$\underbrace{001}_{1}\underbrace{101}_{5}\underbrace{100}_{4} \cdot \underbrace{111}_{7}\underbrace{011}_{3}\underbrace{101}_{5}{}_{(2)} = 154.735_{(8)}$

$\underbrace{0110}_{6}\underbrace{1100}_{C} \cdot \underbrace{1110}_{E}\underbrace{1110}_{E}{}_{(2)} = 6C.EE_{(16)}$

d) $245.115_{(10)} = 245_{(10)} + 0.115_{(10)}$

$245:2 = 122$ r 1
$122:2 = 61$ r 0
$61:2 = 30$ r 1
$30:2 = 15$ r 0
$15:2 = 7$ r 1
$7:2 = 3$ r 1
$3:2 = 1$ r 1
$1:2 = 0$ r 1

$0.115 \cdot 2 = 0.23$
$0.23 \cdot 2 = 0.46$
$0.46 \cdot 2 = 0.92$
$0.92 \cdot 2 = 1.84$
$0.84 \cdot 2 = 1.68$
$0.68 \cdot 2 = 1.36$
$0.36 \cdot 2 = 0.72$
$0.72 \cdot 2 = 1.44$
$0.44 \cdot 2 = 0.88$
$0.88 \cdot 2 = 1.76$

$\Rightarrow 245.115_{(10)} = 11110101.000111010101_{(2)}$

$\underbrace{011}_{3}\ \underbrace{110}_{6}\ \underbrace{101}_{5}.\ \underbrace{000}_{0}\ \underbrace{111}_{7}\ \underbrace{010}_{2}{}_{(2)} = 365.072_{(8)}$

$\underbrace{1111}_{F}\ \underbrace{0101}_{5}.\ \underbrace{0001}_{1}\ \underbrace{1101}_{D}{}_{(2)} = F5.1D_{(16)}$

e) $406.422_{(10)} = 406_{(10)} + 0.422_{(10)}$

$406:2 = 203$ R 0
$203:2 = 101$ R 1
$101:2 = 50$ R 1
$50:2 = 25$ R 0
$25:2 = 12$ R 1
$12:2 = 6$ R 0
$6:2 = 3$ R 0
$3:2 = 1$ R 1
$1:2 = 0$ R 1

$0.422 \cdot 2 = 0,844$
$0.844 \cdot 2 = 1.688$
$0.688 \cdot 2 = 1.376$
$0.376 \cdot 2 = 0.752$
$0.752 \cdot 2 = 1.504$
$0.504 \cdot 2 = 1.007$
$0.007 \cdot 2 = 0.015$
$0.015 \cdot 2 = 0.030$
$0.30 \cdot 2 = 0.06$
$0.06 \cdot 2 = 0.12$

$\Rightarrow 406.422_{(10)} = 110010.110.011011000000_{(2)}$

$\underbrace{110}_{6}\ \underbrace{010}_{2}\ \underbrace{110}_{6}.\ \underbrace{011}_{3}\ \underbrace{011}_{3}\ \underbrace{000}_{0}{}_{(2)} = 626.330_{(8)}$

$\underbrace{1}_{1}\ \underbrace{1001}_{9}\ \underbrace{0110}_{6}.\ \underbrace{0110}_{6}\ \underbrace{1100}_{C}{}_{(2)} = 196.6C_{(16)}$