A. Conversión de Medidas Informáticas

Convertir:

1. 1,4 GB a Kb

   1,4*1024= 1,433.6 Mb
   1,433.6*1024= 1,468,006.4 Kb

2. 1,000,000 KB a Mb

   1000000/1024= 976.5625 Mb

3. 1 EB a GB

   1*1024=1024 PB
   1024PB*1024= 1,048,576Tb
   1,048,576Tb*1024= 1,073,741,824 Gb

4. 1 TB a MB

   1TB*1024=1024 Gb
   1024Gb*1024= 1,048,576Mb

5. 10,000 GB a TB

   10,000 Gb/1024= 9.765625 Tb

B. Conversión de otras potencias a Decimal, con el método Notación Posicional

B1. De binario a decimal

```
 128 64 32 16 8 4 2 1
```

11100101_2 =128+64+32+4+1= 229

01001001_2=64+8+1=73

11011_2=16+8+2+1=27

1000001_2=64+1=65

1001111_2=64+8+4+2+1=79

B2. De octal a decimal

512 64 8 1

1234_8= 512*1+64*2 +8*3+1*4 =512+128+24+4=668

2547_8=512*2+64*5+8*4+1*7=1024+320+32+7=1383

752_8=64*7+8*5+1*2=448+40+2=490

75_8=8*7+1*5=56+5=61

365_8=64*3+8*6+1*5=192+48+5=245

B3. De hexadecimal a decimal

65536 4096 256 16 1

0xD0E2=4096*13+256*0+16*14+1*2=53248+0+224+2=53474

$45AC2_{16}$=65536*4+4096*5+256*10+16*12+1*2=262144+20480+2560+192+2=285378

0xABC=256*10+16*11+1*12=2560+176+12=2748

$A1B1_{16}$=4096*10+256*1+16*11+1*1=40960+256+176+1=41393

0xF4D=256*15+16*4+1*13=3840+64+13=3917

C. Conversión de Decimal a Binario con el método de restas y potencias descendentes

128 64 32 16 8 4 2 1

175= 10101111_2

175-128=47

47-32=15

15-8=7

7-4=3

3-2=1

1-1=0

255=11111111_2

255-128=127

127-64=63

63-32=31

31-16=15

15-8=7

7-4=3

3-2=1

1-1=0

124=01111100_2

124-64=60

60-32=28

28-16=12

12-8=4

4-4=0

128 64 32 16 8 4 2 1

87=$\underline{01010111}_2$

87-64=23

23-16=7

7-4=3

3-2=1

1-1=0

17=$\underline{00010001}_2$

17-16=1

1-1=0

D. Conversión de Decimal a otras potencias con el método de Divisiones Sucesivas

d.1) De decimal a binario

157=$\underline{10011101}_2$

$$\begin{array}{r|l} 157 & 2 \\ -14 & 78 \\ \hline 17 & \\ -16 & \\ \hline 1 & \end{array} \quad \begin{array}{r|l} 78 & 2 \\ -6 & 39 \\ \hline 18 & \\ -18 & \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 39 & 2 \\ -2 & 19 \\ \hline 19 & \\ -18 & \\ \hline 1 & \end{array} \quad \begin{array}{r|l} 19 & 2 \\ -18 & 9 \\ \hline 1 & \end{array} \quad \begin{array}{r|l} 9 & 2 \\ -8 & 4 \\ \hline 1 & \end{array} \quad \begin{array}{r|l} 4 & 2 \\ -4 & 2 \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 2 & 2 \\ -2 & 1 \\ \hline 0 & \end{array}$$

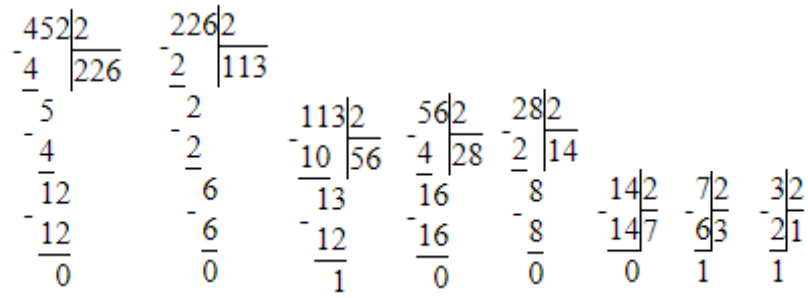
10111001=10011101

64=$\underline{1000000}_2$

$$\begin{array}{r|l} 64 & 2 \\ -6 & 32 \\ \hline 4 & \\ -4 & \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 32 & 2 \\ -2 & 16 \\ \hline 12 & \\ -12 & \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 16 & 2 \\ -16 & 8 \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 8 & 2 \\ -8 & 4 \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 4 & 2 \\ -4 & 2 \\ \hline 0 & \end{array} \quad \begin{array}{r|l} 2 & 2 \\ -2 & 1 \\ \hline 0 & \end{array}$$

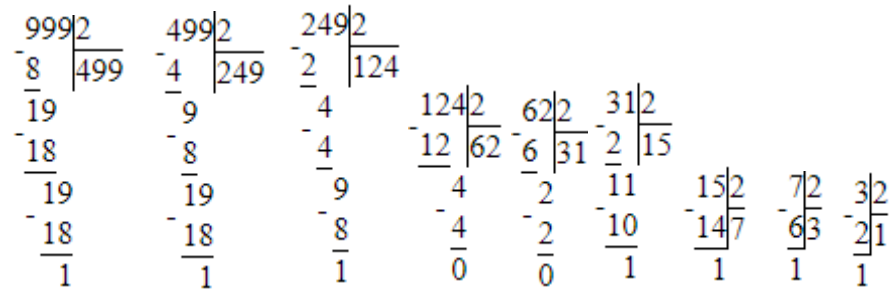
0000001=1000000

452=$\underline{111000100_2}$



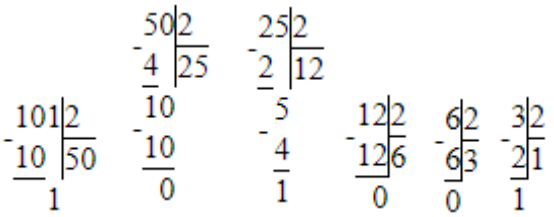
001000111=111000100

999=$\underline{1111100111_2}$



1110011111=1111100111

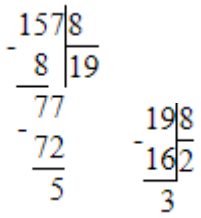
101 =$\underline{1100101_2}$



1010011=1100101

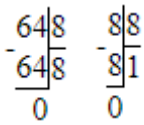
d.2) De decimal a octal

157=235_8



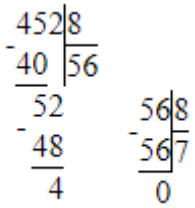
532=235

64=100_8



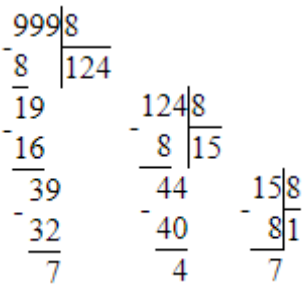
001=100

452=704_8



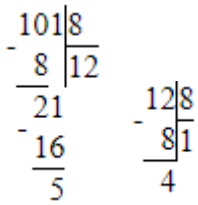
407=704

999=1747_8



7471=1747

101=145_8

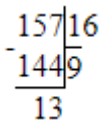


541=145

d.3) De decimal a Hexadecimal

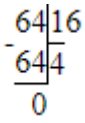
Recordemos que :
10=A, 11=B, 12=C, 13=D, 14=E y 15=F

157=$9D_{16}$



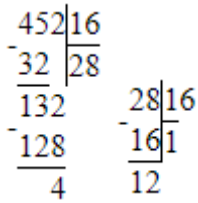
139=9D

64=40_{16}



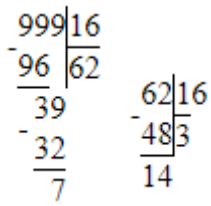
04=40

452=$1C4_{16}$



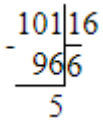
4121=1C4

999=$\underline{3E7_{16}}$



7143=3E7

101=$\underline{65_{16}}$



56=65

E. Conversión de Binario a Hexadecimal

Recordemos que :
10=A, 11=B, 12=C, 13=D, 14=E y 15=F

8 4 2 1

$11100000_2=\underline{E0_{16}}$

1110=14 0000=0

$1001111_2=\underline{4E_{16}}$

0100=4 1111=15

$11011_2=\underline{1B_{16}}$

0001=1 1011=11

$1000001_2=\underline{41_{16}}$

0100=4 0001=1

$1001010_2=\underline{4A_{16}}$

0100=4 1010=10

F. Conversión de Hexadecimal a Binario

8 4 2 1

Recordemos que :
10=A, 11=B, 12=C, 13=D, 14=E y 15=F

$0xD0=\underline{11010000_2}$

D=13=1101, 0=0000

$45A_{16}=\underline{010001011010_2}$

4=0100, 5=0101, A=10=1010

$0xAB=\underline{10101011_2}$

A=10=1010, B=11=1011

$A1_6=\underline{10100001_2}$

A=10=1010, 1=0001

$0xF4D=\underline{111101001101_2}$

F=15=1111, 4=0100, D=13=1101