Laborator 3

1. Convertiti numarul 47 din baza zece in binar fara semn

   47/2=23 rest 1
   23/2=11 rest 1
   11/2=5 rest 1
   5/2=2 rest 1
   2/2=1 rest 0
   1/2=0 rest 1

   

   Rezultat: $\mathbf{47_{(10)} = 101111_{(2)}}$

2. Convertiti -27 din baza 10 in binar magnitudine cu semn

   27/2=13 rest 1
   13/2=6 rest 1
   6/2=3 rest 0
   3/2=1 rest 1
   1/2=0 rest 1

   

   Rezultat: $\mathbf{-27_{(10)} = 10011011_{(2)}}$

3. Convertiti 213 din baza 16 in baza 10

   3*16^0 + 1*16^1 + 2*16^2 = 3*1 + 1*16 + 2*256 = 3 + 16 + 256 = 531

   Rezultat: $\mathbf{213_{(16)} = 531_{(10)}}$

4. Convertiti 10110.101 din baza 2 in baza 10

   0*2^0 + 1*2^1 + 1*2^2 + 0*2^3 + 1*2^4 + 1*2^(-1) + 0*2^(-2) + 1*2^(-3)=

   = 2+4+16+0,5+0,125= 22,625

   Rezultat: $\mathbf{10110.101_{(2)} = 22.625_{(10)}}$

5. 34.625 din baza 10 in baza 4

   34/4=8 rest 2
   8/4=2 rest 0
   2/4=0 rest 2
   0.625*4=2.5
   0.5*4=2.0

   

   Rezultat: $\mathbf{34.625_{(10)} = 202.22_{(4)}}$

6. 011011 din baza 2 in baza 10

   1*2^0 + 1*2^1 + 0*2^2 + 1*2^3 + 1*2^4 + 0*2^5= 1 + 2 + 8 + 16 =27

   Rezultat: $\mathbf{011011}_{(2)} = \mathbf{27}_{(10)}$

7. -27 in binar exces 32

   -27+32 = $\mathbf{5}_{(10)} = \mathbf{000101}_{(2)}$

8. 011011 din binar in baza 16

   (0001)(1011)=1B

   Rezultat: $\mathbf{011011}_{(2)} = \mathbf{1B}_{(16)}$

9. 55.875 din baza 10 in binar fara semn

   55/2=27 rest 1

   27/2=13 rest 1

   13/2=6 rest 1

   6/2=3 rest 0

   3/2=1 rest 1

   1/2=0 rest 1

   

   0.875*2=1.750

   0.75*2=1.5

   0.5*2=1.0

   

   Rezultat: $\mathbf{55.875}_{(10)} = \mathbf{110111.111}_{(2)}$

10. 132.2 din baza 4 in baza 16

    (01)(32).(20)=1E.8

    Rezultat: $\mathbf{132.2}_{(4)} = \mathbf{1E.8}_{(16)}$

11. 0.201 din baza 3 in baza 10

    0*3^0 + 2*3^(-1) + 0*3^(-2) + 1*3^(-3) = 2/3 + 1/27 = 19/27 = 0.(703)

    Rezultat: $\mathbf{0.201}_{(3)} = \mathbf{0.(703)}_{(10)}$