

Assignment 1: Number Systems

1. Convert the following decimal values to binary then find the 1st and 2nd

complement:

a) 154

a= to binary:10011010
1st=01100101
2nd=01100110

c=to binary:100100001010
1st=011011110101
2nd=011011110110

b) 413

b=to binary:110011101
1st=001100010
2nd=001100011

d=to binary:1110010110
1st=0001101001
2nd=0001101010

c) 2310

d) 910

2. Convert $(247)_{10}$ to binary, octal, hexadecimal number system

to binary=11110111
to octal= 367
to hexadecimal=F7

3. Convert $(48.87)_{10}$ to binary, octal, hexadecimal number systems

to
binary=110000.1010111
to octal= 60.127
to hexadecimal=30.57

4. 1100011 is a 7-bit binary number in 2's complement notation. What is the

decimal value?

2nd= 1100011
binary=0011101
decimal =1+0+4+8+16=-29

5. The 2nd complement of $(01010)_2$ is 10110

6. The 10's complement of $(4887)_{10}$ is 5,113

7. Add $(01001111)_2$ to $(00100011)_2$. 01110010

8. Subtract $(01001111)_2$ from $(01100011)_2$. 10010100

01001111=79
01100011=99

10010100=-20

9. Subtract $(01100011)_2$ from $(01001111)_2$. 00010100