UVa Email ID (no aliases please): ahy3nz@virginia.edu_____

Name Alex Yang_____ Lab section 104_____

Lab 4 - Radix Conversion Worksheet

Convert:

1. 0x4F45 into octal

4*16^3 + 15*16^2 + 4*16^1 + 5*16^0 = 20293_{10}
Largest power of 8 in 20293 is 8^4
20293 / 8^4 = 4 r3909
3909 / 8^3 = 7 r325
325 / 8^2= 5r5
5/8^0= 5 r0
47505_8

2. 269_{10} into radix 7

269 / 7^2 = 5r24
24/7^1 = 3r3
3/7^0 = 3
533_7

3. 110011011110_2 into decimal

2^11 + 2^10 + 2^7 + 2^6 +2^4+ 2^3 + 2^2 + 2^1 = 3294_{10}

4. $2BD_{19}$ into decimal

2*19^2 + 11*19 + 13*1 = 944_{10}

5. Given the following positive binary integer in two's complement: 0101001101011101

a) Convert the number to hexadecimal:

0101 0011 0101 1101 = $535D_{16}$

b) Negate the number.

Change the sign bit to 1

1101 0011 0101 1101 = $D35D_{16}$