UVa Email ID (no aliases please): cfk5ax_____

Name: Christian Kinzer_____ Lab section: 9:30 AM___

Lab 4 - Radix Conversion Worksheet

Convert:

1. 0x4F45 into octal
   4 * 16^3 + 15 * 16^2 + 4 * 16^1 + 5 * 16^0 = 20293
   8^4 = 4096, 4*8^4 = 16384, 20293 – 16384 = 3909
   8^3 = 512, 7*8^3 = 3584, 3909 – 3584 = 325
   8^2 = 64, 5*8^2 = 320, 325 – 320 = 5. Final Answer: **47505**

2. 269_{10} into radix 7
   7^2 = 49, 5*7^2 = 245, 269 – 245 = 24
   7^1 = 7, 3*7^1 = 21, 24 – 21 = 3
   Final Answer: **533**

3. 110011011110_2 into decimal
   2 + 4 + 8 + 16 + 64 + 128 + 1024 + 2048 = **3294**

4. $2BD_{19}$ into decimal
   2 * 19^2 + 11 * 19 + 13 = 722 + 209 + 13 = **944**

5. Given the following positive binary integer in two's complement: 0101001101011101
   1+4+8+16+64+256+512+4096+16384=21341
   a) Convert the number to hexadecimal:
      16^3=4096, 5*16^3=20480, 21341-20480=861
      16^2=256, 3*16^2=768, 861-768 = 93
      5*16 = 80, 93-80 = 13. Final Answer = **0x535D**

   b) Negate the number.
      1010110010100011 (flip all bits and add 1)