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Lab 4 - Radix Conversion Worksheet

Convert:

1. 0x4F45 into octal

first into binary: 0100 1111 0100 0101
into decimal: 16384 + 2048 + 1024 + 512 + 256 + 64 + 4 + 1 = 20293
into octal: 20293/8 = 2536 rem 5. 2536/8 = 317 rem 0. 317/8 = 39 rem 5. 39/8 = 4 rem 7. 4/8 = 0 rem 4.
Answer : 47505

2. 269_{10} into radix 7

269/7 = 38 rem 3. 38/7 = 5 rem 3. 5/7 = 0 rem 5.
Answer: 533

3. 110011011110_2 into decimal

into decimal: 2 + 4 + 8 + 16 + 64 + 128 + 1024 + 2048 = 3294

4. $2BD_{19}$ into decimal

into decimal: (2*19^2) + (11*19^1) + (13*19^0) = 722 + 209 + 13 = 944

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

   a) Convert the number to hexadecimal:
   First bit: 0 → positive
   16384 + 4096+ 512 + 256 + 64 + 16 + 8 + 4 + 1 = 21341

   b) Negate the number.
   Original: 0101001101011101
   Flip: 1010110010100010
   Add one: 1010110010100011