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Name: Julia Shea Lab section: 12:30 Tues.

Lab 4 - Radix Conversion Worksheet

Convert:

1. 0x4F45 into octal

- Converted into binary:
  - 4 F 4 5
  - 0100 1111 0100 0101
  - 0100111101000101
- Grouped to better convert to octal:
  - 000 100 111 101 000 101
- Convert to octal: **47,505**

2. 269_{10} into radix 7

- 7^2 = 49: largest power of 7 that is less than 269
  - 269/49 = 5 R 24
  - 24/7 = 3 R 3
  - 3/1 = 3 R 0
- Radix 7: **533**

3. 110011011110_2 into decimal

- (0*2^0)+(1*2^1)+(1*2^2)+(1*2^3)+(1*2^4)+(0*2^5)+(1*2^6)+(1*2^7)+(0*2^8) +(0*2^9)+(1*2^10)+(1*2^11)
- 2+4+8+16+64+128+1024+2048
- **3,294**

4. $2BD_{19}$ into decimal

- 2 B D = 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:

- Subtract 1: 0101001101011100
- Flip the bits: 1010110010100011
- Separate into 4-bit chunks: 1010 1100 1010 0011
- Convert to hex: 0xaca3

    b) Negate the number.

- Flip the bits: 1010110010100010
- Add 1: **1010110010100011**