

CSE/EEE230 Spring 2020  
Assignment 1

Part 1: Unsigned data: Convert each as indicated. You do not need to show your work. If the answer must be a byte, then it must be the correct size.

1. Hexadecimal to binary (1 byte)
  - a. 0x3E  
a. 00111110
  - b. 0x87  
a. 10000111
2. Binary to hexadecimal
  - a. 10010101  
a. 0x95
  - b. 01011011  
a. 0x5B
3. Binary to decimal (unsigned)
  - a. 00110101  
a. 53
  - b. 00101111  
a. 47
4. Hexadecimal to decimal (unsigned)
  - a. 0x3E  
a. 62
  - b. 0x2B  
a. 43
5. Decimal to binary (as 1 byte)
  - a. 37  
a. 00100101
  - b. 61  
a. 00111101
6. Decimal to hexadecimal (as 1 byte)
  - a. 37  
a. 0x25
  - b. 61  
a. 0x3D

Part 2: Signed values: Convert each as indicated. You do not need to show your work. If the answer must be a byte, then it must be the correct size.

7. Decimal to Hexadecimal (1 byte, signed magnitude)

- a. -19
  - a. 0x93
- b. -38
  - a. 0xA6

8. Decimal to Hexadecimal (1 byte, one's complement)

- a. -19
  - a. 0xEC
- b. -38
  - a. 0xD9

9. Decimal to Hexadecimal (1 byte, two's complement)

- a. -19
  - a. 0xED
- b. -38
  - a. 0xDA

10. Hexadecimal to decimal (signed magnitude)

- a. 0x86
  - a. -6
- b. 0xE9
  - a. -105

11. Hexadecimal to decimal (1's complement)

- a. 0x86
  - a. -121
- b. 0xE9
  - a. -22

12. Hexadecimal to decimal (2's complement)

- a. 0x86
  - a. -122
- b. 0xE9
  - a. -23
- c. 0x14
  - a. 20