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CS 264  
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Spring Homework 1

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| Row | 8-Bit Binary | Hexadecimal | Decimal |
| 1 | **1011 11002** | BC16 | 18810 |
| 2 | 0111 11012 | **7D16** | 12510 |
| 3 | 1001 01012 | 9516 | **-10710** |

Row 1: Hexadecimal:   
 Decimal:

Row 2: Binary:   
 Decimal:

Row 3: Binary:   
 Hexadecimal:

1. 8D2816
   1. Signed integer:
   2. Unsigned integer:
2. X: 01110011, Y: 10010100
   1. In decimal:
   2. Arithmetic operations \*indicate overflow
   3. Overflow occurs in step i and step iii. This is determined through seeing if the produced result is greater than what a given register can store—in this case, we are utilizing 8-bits, thus 0111 11112 🡪 -127­­­­10 to 12710 is the largest number that can be stored, in respect to signed numbers.
3. In 2’s complement number system, we cannot use a 16-bit binary number to represent decimal number 4023010. The maximum number is 0111 1111 1111 11112 🡪 -3276810 to 3276710, where 4023010 > 3276710—deeming it impossible to use a 16-bit binary number to represent the decimal number.