**Number Systems – Binary and Hexadecimal**

1. Convert the following binary numbers to decimal:

1. 10111011: 187
2. 11111111:128: 255
3. 100000: 32
4. 1010101: 85
5. 1011100: 92

2. Convert the following decimal numbers to binary:

a) 32: 00100000

b) 73: 01001001

c) 1025: 0000010000000001 You cannot do it in binary. In hexadecimal it is. 0x401

3. Complete the following tables:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Decimal to Binary** | |  | **Binary to Decimal** | |
| 41 | 00101001 |  | 00001111 | 15 |
| 30 | 00011110 |  | 00001101 | 13 |
| 5 | 00000101 |  | 00100101 | 37 |
| 10 | 00001010 |  | 00000010 | 2 |
| 99 | 01100011 |  | 00111100 | 60 |
| 123 | 01111011 |  | 00000100 | 4 |
| 244 | 11110100 |  | 00000110 | 6 |
| 13 | 00001101 |  | 11111101 | 253 |
| 78 | 01001110 |  | 01000100 | 68 |
| 143 | 10001111 |  | 00100001 | 33 |
| 94 | 01011110 |  | 00011010 | 26 |
| 58 | 0111010 |  | 10101011 | 171 |
| 190 | 10111110 |  | 10011001 | 153 |
| 202 | 11001010 |  | 01110111 | 119 |
| 6 | 00000110 |  | 00011111 | 31 |

4. Convert the following hexadecimal numbers to decimal.

a) 7DE : 2014

b) 80E1 : 32993

c) FFFFFF : 16777215

Does question c) look at all familiar to you?

c) FFFFFF is the hex code for black. That is why its familiar to me.