

**3.1-** 00100011

**3.6-**0x15

**3.7-**0x19

**3.8-**21

**3.9-**25

**3.10-**11011101

**3.11-**11100000

**3.18-**

16-Bit Binary	Hexadecimal	Decimal
1111111100111100	0xFF3C	-196
1111111110001000	0xFF88	-121
1111111110000000	0xFF80	-128
1111111111111010	0xFFFA	-4
0000000000010001	0x0011	17
1111111111100111	0xFFE7	-25

**3.20-** One's complement number system is easier to negate the numbers. Two's complement does not have a negative zero and is much more advantageous in addition, subtraction, and multiplication.

**3.21-** 11010101 with an overflow of 1. Overflow occurred by taking the two's complement of 00010011, 11101101 and adding it to 11101000, making it a 9-bit value, with a 1-bit overflow.

**3.22** – 0x0088

**3.24-**

X = 0b10010100 = 0d148

Y = 0b00101100 = 0d44

X + Y = 11000000 No overflow. 94+2C=0xC0

X – Y = 01101000 Overflow of 1, it is a 9-bit value.

D4+94=0x168

Y – X = 10011000 No overflow. 6C+2C=0x98