CS-115
HW3

"I pledge my honor that I have abided by the Stevens Honor System." – Shreyas Keerthi

1. convert following #s to decimal:

(a) $0101\ 1001_2$

$0\times128 + 1\times64 + 0\times32 + 1\times16 + 1\times8 + 0\times4 + 0\times2 + 1\times1 = \boxed{89}$

(b) $1011\ 1000_2$

$1\times128 + 0\times64 + 1\times32 + 1\times16 + 1\times8 + 0\times4 + 0\times2 + 0\times1 = \boxed{184}$

(c) $1100\ 1001_2$

$1\times128 + 1\times64 + 0\times32 + 0\times16 + 1\times8 + 0\times4 + 0\times2 + 1\times1 = \boxed{201}$

2. (a) 103 = 0110 0111

(b) −28: 28 = 0001 1100 → 1111 1111 1110 0011 + 1 = 1110 0100

(c) −97: 97 = 0110 0001 → 1111 1111 1001 1110 + 1 = 1001 1111

3. an 8 bit two's complement the min is 1000 0000 while max is 0111 1111 which in decimal is ___ and ___ respectively covering ___ possibilities.

4. (a) 83 + 11: 11 = 0000 1011; 83 = 0101 0011; 94 = 0101 1110

(b) 68 + 51: 51 = 0011 0011; 68 = 0100 0100; 119 = 0111 0111

(c) −7: 7 = 0000 0111 → −7 = 1111 1000 + 1 = 1111 1001

19 = 0001 0011

19 + −7 = 0001 1100