Assignment 1 – Week 2.

2’s complement exercise

1: Show how -27_10 would be expressed in two’s compliment notation.

00011011_2 = 27_10

11100100_2 +1

11100101_2 = -27_10

2: Our numbers are 8-bits long, suppose we want to subtract 27_10 from 155_10, show how to perform binary subtraction using the two’s compliment method.

01110011_2 = 115_10

11100101_2 = +(-)27_10

01011000_2 = 88_10

3: Form the two’s complement for -115_10 and the calculation 27_10 – 115_10 using two’s complement.

00011011_2 = 27_10

10001101_2 = +(-)115_10

10101000_2 = -88_10

4: Show how to convert the result to decimal using the two’s complement method.

10101000_2 = -88_10

01010111_2 = 88_10