L6 practice problems

Answers:

1. 9F + 4E = Ed (hex) = 1110 1101_2

   In unsigned decimal, it is [159] + [78] = [237]

2. 9F (hex) = 1001 1111 (bin)

   2's complement of 1001 1111 is 0110 0001, i.e. 97 (dec)

   4E (hex) = 0100 1110 (bin) = 78 (dec)

   Ed (hex) = 1110 1101 (bin)

   2's complement of 1110 1101 is 0001 0011, i.e. 19 (dec)

   Thus in signed decimal, it is [-97] + [78] = [-19]

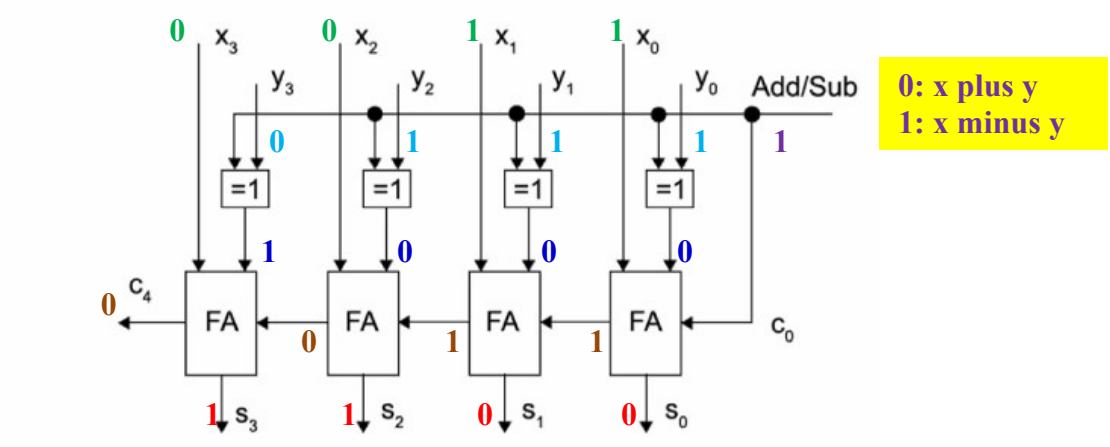
3. 3 (dec) = 0011 (4-bit 2's complement) -> input x

   7 (dec) = 0111 (4-bit 2's complement) -> input y

   1000 -> 1's complement of y

   3 – 7 = [0011] + [1000] + [1] = [1100] -> output s3-s0

   [1100] is 2's complement representation of -4 (dec)



2. Duplicate 2 more FAs in the Figure of Question 3 and make similar connections for X5, X4, Y5, Y4, C5 and S5, S4.