INF1400- Uke 04

1. Regn ut følgende subtraksjon
    a. 00001000 – 00000011
    b. 00001100 – 11110111
    c. 11100111 – 00010011
    d. 10001000 – 11100010

2. Design a combinational circuit that adds one to a 4-bit binary number. For example, if the input of the circuit is 1101, the output is 1110. (HINT! The circuit can be designed using four half-adders)

3. A combinational circuit produces the binary sum of two 2-bit numbers, x1x0 and y1y0. The outputs are C, S1, and S0. Provide a truth tableof the combinational circuit.

4. Design a circuit for the above problem using two full-adders.

5. (VANSKELIG) Consider the 3-bit, 2-complement conversion below and implement it using full-adders

A_2	A_1	A_0	D_2	D_1	D_0
0	0	0	0	0	0
0	0	1	1	1	1
0	1	0	1	1	0
0	1	1	1	0	1
1	0	0	1	0	0
1	0	1	0	1	1
1	1	0	0	1	0
1	1	1	0	0	1

6. Now implement the inverse operation, i.e. one that takes D2, D1, D0 and produces the output (A2,A1,A0). (HINT! Remember how to perform subtraction using 2-complements)

7. Løs oppgaver i slutten av kapittel 4.