Exercise 1. Find the sum of following pairs of hex numbers

a. 3E91 + 2F93 b. 91B + 6F2

c. ABC + BEF d. 2FFE + 0002

Exercise 2. Perform the following subtractions on the pairs of hex numbers

a. 3E91 – 2F93 b. 91B – 6F2

c. 0300 - 005A d. 0200 – 0003

Exercise 3. Design a 2 bit Full adder using basic gates (AND, OR, NOT)

Exercise 4.

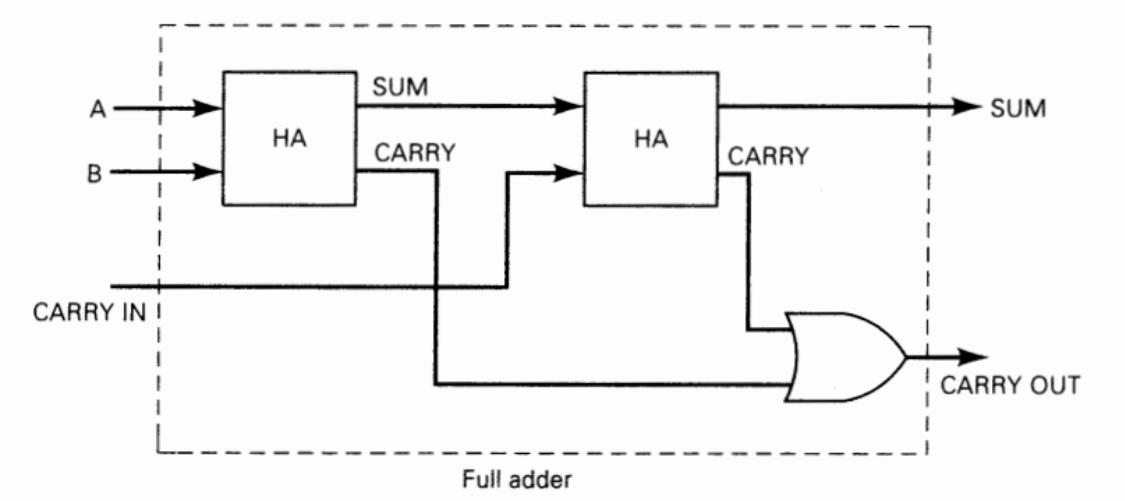
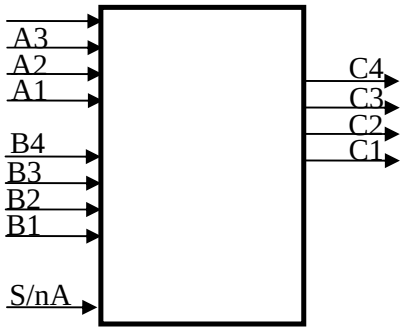


Figure 1. Full adder

A Full-adder can be implemented in many difference ways. Figure 1 shows how one may be constructed from two half adder. Construct the truth table for this arrangement, and verify that it operates as a Full-adder

Exercise 5.



when S/nA = 0, (C4-C1) = (A4-A1) + (B4-B1)

when S/nA = 1, (C4-C1) = (A4-A1) - (B4-B1)

Figure 2. Adder/subtractor circuit

Using 74LS283 (adder IC) and 74LS86 (Xor gate) to design a Adder/Subtractor circuit in Figure 2.