

數位邏輯設計 Ch7 HW

注意事項：請寫出詳細計算與分析過程，不可以只寫答案！

Problems:

- 7.1** Add the following unsigned binary numbers.
- $10101 + 1010$
 - $10101 + 1011$
 - $1111 + 1111$
- 7.3** Write the following decimal numbers in 8-bit true-magnitude, 1's complement, and 2's complement forms.
- 110
 - 67
 - 54
- 7.12** Subtract the following hexadecimal numbers.
- $F86H - 614H$
 - $E72H - 229H$
 - $37FFH - 137FH$
- 7.24** Write the general form of the fast carry equation. Use it to generate Boolean expression for C_1 , C_2 , and C_3 for a fast carry adder.
- 7.33** Modify the 4-bit adder/subtractor drawn in Figure 7.15 to include an overflow detection circuit.

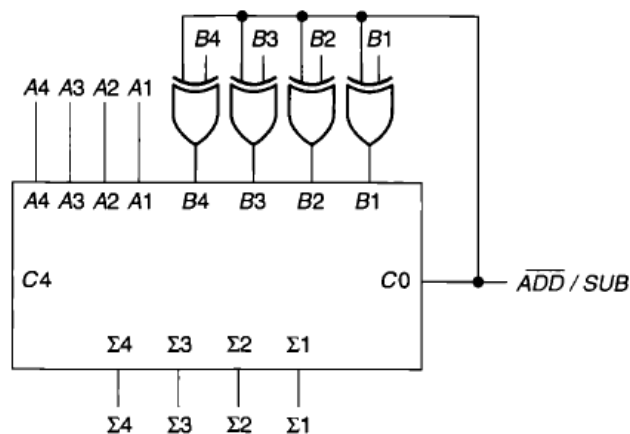


FIGURE 7.15 2's Complement Adder/Subtractor

- 7.37** What is the maximum BCD sum of two 3-digit BCD numbers plus an input carry? How many digits are needed to display the result?
- 7.45** Draw the block diagram of a circuit that will add two 3-digit BCD numbers and display the result as a series of decimal digits. How many digits will the output display?