ARITHMETIC

1. Add the following decimal numbers after converting each to its BCD code:

a) 74+23
b) 58+37
c) 147+380
d) 385+118
e) 998+003
f) 623+599

2. Find the additions or the subtractions on the following pairs of hex numbers.

a) 91B+6F2
b) FFF+0FF
c) D191+AAAB
d) 91B-6F2
e) 0200-0003
f) 2F00-4000

3. Modify the circuit of Slide 49 (page 13) so that a single control input, X, is used in place of ADD and SUB. The circuit is to function as an adder when X=0 and as a subtractor when X = 1. Then simplify each set of gates. (Hint: Note that now each set of gates is functioning as a controlled inverter.)

4. Determine the $\sum$ outputs of 74LS382 in Slide 51 (page 13) for the following sets of inputs.:
a) [S] = 110, [A] = 10101100, [B] = 00001111
b) [S] = 100, [A] = 11101110, [B] = 00110010