EE 308 – Homework 3

1. Consider the following 8-bit hexadecimal signed number. Find their decimal equivalents:

(a) 0x45

(b) 0xC2

(c) 0xBF

(d) 0x51

2. Do the operations indicated below. The operations are performed in an 8-bit accumulator. Find the 8-bit results for the operations. Indicate the state of the N, Z, C, and V bits after each iteration.

Acc. Operation	**N Z C V**
(a) 0x45 + 0xA2	
(b) 0x65 + 0x12	
(c) 0xB1 – 0xF9	
(d) 0x92 – 0x42	

3. Reverse assemble the following HC12 op codes. The first byte of data is at address $2000.

CD 13 88 CE13 88 04 35 FD 04 36 F7 3F

Indicate what instruction these bytes correspond to, and the addressing mode which is used.

4. Below shows a sequence of instructions to be executed by a 68HCS12. Fill in the table, showing the value in accumulator A and the state of the condition flags N, Z, V and C after each instruction. The table shows the initial value of the condition flags and B .

Instruction	Accumulator A	N Z V C
LDAA #$20 ADDA #$91 DECA LDAA #$B0 CMPA #$91 ROLA	$04	1 0 1 0

5. Write a program to count the number of elements that are divisible by 4 in an array of N=10 8-bit numbers.