EE 308 – Homework 1
Due January 25, 2012

1. Explain what the command `BF 2000 20FF AA` of the D-Bug 12 monitor does. (You may need to look in the manual Reference Guide for D-Bug12.)

2. Convert your name to ASCII. For example, if your name is "Jane Smith", the answer will be become

J	a	n	e		S	m	i	t	h
0x4A	0x61	0x6E	0x65	0x20	0x53	0x6D	0x69	0x74	0x68

3. Consider the following MC9S12 program:

```
; MC9S12 demo program
; EE 308

; This is a program to add four numbers in memory from $1000 through $1003,
; divide the sum by four, and store the result in address $1004
prog:     equ      $2000        ; Starting address from program
data:     equ      $1000        ; Starting address for data
          org      prog         ; Set initial program counter value
          ldaa     input1       ; Load first number into ACCA
          adda     input2       ; add second number
          adda     input3       ; add third number
          adda     input4       ; add fourth number
          asra                  ; divide by 2
          asra                  ; divide by 2
          staa     average      ; save result in memory
          swi

          org      data         ; Put data starting at this location
input1:   dc.b     $35          ; First number
input2:   dc.b     $42          ; Second number
input3:   dc.b     $3f          ; Third number
input4:   dc.b     $2c          ; Fourth number
average:  ds.b     1            ; Reserve one byte for results
```

   What is the value of Register A after each instruction of the program has executed? (E.g., after the instruction `ldaa input1`, Register A will have a 0x35 in it.) You do not need to consider the `swi` instruction.

4. What is the addressing mode for each of the following instructions:

   - `ldaa  input1`
   - `asra`

5. What are the address of RAM in the MC9S12 which are available to you for your program and data?