ECE 3724 Quiz #3 Fall '05 Reese - Solution

NAME: _____

You may NOT use a calculator. Assume the following memory/register contents at the **beginning of each** instruction:

Location	Contents:
0x059	0xA8
0x05A	0x08
0x05B	0xFD
0x05C	0x29

W = 0xC3

1. For problems a, b give the contents of any affected memory or register locations.
   a. (2 pts) subwf 0x05B, w

W reg = (0x05B) – (w) = 0xFD – 0xC3 = 0x3A
new value of register W is 0x3A

   b. (2 pts) movlw 0x5C

move the literal value 0x5C to W, so new value of W is 0x5C.

2. Do the following:

   a. (3 pts) Write an instruction or instruction sequence that copies the contents of location 0x243 to location 0x3FF

```
;; Solution A
 movff 0x243, 0x3ff
```

```
;; Solution B
 movlb 2          ;BSR =2
 movf   0x243,w   ;w ←(0x243)
 movlb 3
 movwf  0x3FF     0x3ff ←(W)
```

   b. Convert the instruction ' decf 0x2A0, f' to machine code. Use our previously stated assumptions about the setting of the access ('a') bit.

```
                  0000 01da ffff ffff
decf 0x2A0,f      0000 0111 1010 0000
                   0    7    A   0
= 0x07A0 (d = 1 because destination is f),
         (a = 1, because 0x2A0 is not in access bank, must use BSR)
note only the last 8 bits of 0x2A0 is encoded in the instruction.
```