NAME: _______________________

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

Location        Contents:
0x060          0xAD
0x061          0x08
0x062          0x80
0x063          0x29

W = 0xC3, STATUS = 0x00

a. (2 pts) rlcf 0x062, f

Mem/Reg new value:_0x00_  Z=_1_  C=_1__

left shift [0x62] = left shift 0x80
Cnew ← 0x80 ← Cold ; Cnew ← 1000 0000 ← Cold
Cnew = 1, new [0x62] = 0x00

b. (2 pts) xorwf 0x063,w

Mem/Reg new value:__EA     Z=_0_  C=_0__

[0x063] = 0x29 = 0010 1001
W    = 0xC3 = 1100 0011
new [0x63]   = 1110 1010 = 0xEA

c. (6 pts) Write PIC18 assembly code for the C code below. Please observe that j-k-1 is not equal to j – (k-1) !!! However j-k-1 is equal to (j-k)-1. Also, the sublw instruction does literal – W, not W-literal.

unsigned char i,k,j;

if (k > i)
    k = i+5
} else {
    j = j – k – 1;
}

;; do I – K, if k > i is false, then I >= K so carry flag will be set as no borrow occurs ;
    movwf k,w
    subwf i,w ; i-k
    bc else ;false branch, i >= k
    movf  i,w
    addwf k,f ; k = k +i
    movlw 5 ; w = 5
    addwf k,f ; k = k +5
    bra end_if
else_if
    movf  k,w
    subwf j,f ;j = j-k
    decf  j,f ;j = j-1
end_if

;;rest of code