**Problem 1.** For the following MIPS assembly instructions, what is a corresponding C statement?

add f, g, h  
sub f, i, f

f = g+h;

f = i-f;

**Problem 2.** For the following C statement, what is the corresponding MIPS assembly code? Assume that the variables f, g, h, i, and j are assigned to registers $s0, $s1, $s2, $s3, and $s4, respectively. Assume that the base address of the word arrays A and B are in registers $s6 and $s7, respectively.

B[8] = A[i−j]

Sub $t0, $s3, $s4 #(i-j)

add $t1, $s6, $t0 # $t1 is the address of A[i-j]

lw $t2, 0($t1) # loads A[i-j] into register $t2

Sw $t2, 32($s7) #stores the value from $t1 into B[8]

**Problem 3.** Translate 0xabcdef12 into decimal. You may simply assume that it is an unsigned integer.

=10\*16^7 + 11\*16^6 + 12\*16^5 + 13\*16^4 + 14\*16^3 + 15\*16^2 + 1\*16^1 + 2\*16^0

= 2684354560 + 184549376 + 12582912 + 851968 + 57344 + 3840 + 16 + 2

= 2,882,400,018

**Problem 4.** Assume $t0 holds the value 0x00101000. What is the value of $t2 after the following instructions?

slt $t2, $0, $t0  
      bne $t2, $0, ELSE  
      j DONE  
ELSE: addi $t2, $t2, 2  
DONE:

00101000 = 40

$t2 = 0 < 40? Yes

$t2 = 1

Does $t2 == 0? No

$t2 +=2

$t2 = 3