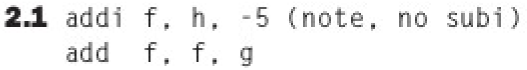
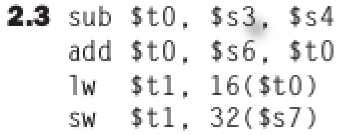
Department of Computer Science **University of San Francisco**

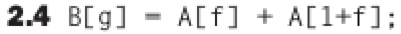
Computer Science 315
Spring 2016
Computer Architecture
Homework #2 Solutions



```
2.1 addi f, h, -5 (note, no subi)
    add  f, f, g
```



```
2.3 sub $t0, $s3, $s4
    add $t0, $s6, $t0
    lw  $t1, 16($t0)
    sw  $t1, 32($s7)
```



```
2.4 B[g] = A[f] + A[1+f];
```

4)---

```
        .text
        .globl  main
main:
        subu    $sp, $sp, 16    # Make additional stack space.
        sw      $ra, 12($sp)    # Save the return address  (Not necessary with MARS)

        li      $t0, 0          # set x to 0
        li      $t1, 0x09       # set y to 0x09
        li      $t2, 0x42       # set z to 0x42
        move    $t3, $t1        # set temp = y

Loop:   ble     $t3, 0, Done    # If counter zero, exit
        add     $t0, $t0, $t2   # x = x + z
        sub     $t3, $t3, 1     # decrement counter
        j       Loop            # Go to the loop test

                                # Done with the loop, print result
Done:   li      $v0, 1          # Code to print an int
        move    $a0, $t0        # Put the int in $a0
        syscall                 # Print the int

        # Restore the values from the stack, and release the stack.
        lw      $ra, 0($sp)     # Retrieve the return address
        addu    $sp, $sp, 16    # Free up added stack space.

        li    $v0, 10           # Exit system call:  this works with MARS and SPIM
        syscall
```