Homework 2

a.

1. 000000 00010 00011 00100 00000 10 0000

First 6 bits with last 6 bits = add

First register that is the first part being added (00010) = $v0

Second register that is the second part being added (00011) = $v1

Third register that the addition of the other two will be put (00100) = $a0

Thus, it is:

**add $a0, $v0, $v1**

1. 100011 00110 00101 0000 0000 0000 0111

First 6 bits = lw

Next 5 bits = $a2

Next 5 bits = $a1

Last 16 bits is the immediate value which is the offset = 7

Thus, it is:

**lw $a1, 7($a2)**

1. 000100 00010 00111 0000 0000 0000 0110

First 6 bits = beq

Next 5 bits = $v0

Next 5 bits = $a3

Next 16 bits is the offset = 6

Thus, it is:

**beq $v0, $a3, 6**

b.

i. and $t0, $t1, $t2

**000000 01001 01010 01000 00000 100100**

ii. sw $t0, 15($t1)

**101011 01001 01000 0000 0000 0000 1111**

iii. bne $t0, $t1, loop

**000101 01000 01001 0000 0000 0001 0000**

c.

Accumulator:

clear

load a

mult 1

mult b

add 2

mult 3

store c

Stack:

push b

push a

push 1

mult

mult

push 2

add

push 3

mult

pop c

General Purpose Registers:

mult c, a, 1

mult d, c, b

add e, d, 2

mult f, e, 3