```
# setup data
# update row1pos, row2pos, col1pos, col2pos based on setup input array matrix
.data
array1:         .word 1 2
                .word 3 4
row1pos:        .word 2
col1pos:        .word 2

array2:         .word 1 2 3
                .word 4 5 6
row2pos:        .word 2
col2pos:        .word 3
CMatrix:        .word 0
                .word 0
.text

main:
# load input array row and col
la x17, array1
lw x21, row1pos
lw x19, col1pos
la x29, CMatrix
la x22, array2
lw x24, row2pos
lw x20, col2pos
addi x5, x5, 4

#matrix 2 col size
mul x31, x5, x20

#matrix 2 col size


mul x13, x5, x19
mul x23, x20, x5
add x23, x22, x23
mul x18, x19, x5
add x18, x17, x19
beq x19, x24, traverseandmultiply
addi x10, x0, 17

#set error code
addi x11, x0, 99
ecall

#traversing col and row for matrix1 and matrix2
traverseandmultiply:
beq x6, x19, outoflayer
lw x26, 0(x17)
lw x25, 0(x22)
mul x27, x26, x25
add x28, x28, x27
addi x17, x17, 4
add x22, x22, x31
addi x6, x6, 1
jal x0, traverseandmultiply


#going thru multiple layers and loop
outoflayer:
addi x6, x0, 0
sw x28, 0(x29)
addi x29, x29, 4
addi x28, x0, 0
addi x12, x12, 1
addi x8, x8, 1
mul x9, x21, x20
beq x12, x20, next
la x17, array1
la x22, array2
mul x30, x12, x5
add x22, x30, x22
mul x30, x11, x13
add x17, x30, x17
jal x0, traverseandmultiply

next:
beq x11, x21, done
addi x11, x11, 1
la x17, array1
la x22, array2


mul x30, x13, x11
add x17, x17, x30
addi x12, x0, 0
jal x0, traverseandmultiply

#loading final matrix
done:
la x29, CMatrix
addi x6, x0, 0

#print out the matrix 3 values
doprint:
bge x6, x9, exit
addi x10, x0, 1
lw x11, 0(x29)
addi x29, x29, 4
ecall
addi x11, x0, 32
addi x10, x0, 11
ecall
addi x6, x6, 1
jal x1, doprint


exit:
```