```
//initial A[]
addi $3, $0, 1
addi $4, $0, 2
addi $5, $0, 3
addi $6, $0, 4
addi $7, $0, 5
addi $8, $0, 6
addi $9, $0, 7
addi $10, $0, 8
addi $11, $0, 9
sw $3, 0($0);
sw $4, 4($0);
sw $5, 8($0);
sw $6, 12($0);
sw $7, 16($0);
sw $8, 20($0);
sw $9, 24($0);
sw $10, 28($0);
sw $11, 32($0);

//initial B[]
sw $3, 36($0);
sw $4, 40($0);
sw $5, 44($0);
sw $6, 48($0);
sw $7, 52($0);
sw $8, 56($0);
sw $9, 60($0);
sw $10, 64($0);
sw $11, 68($0);

//matrix multiplication start, i = $3, j = $4, k = $5, n = 3 = $2, const 4 = $1, A[]base=0,
b[]base=36, c[]base = 72
addi $1, $0, 4;                 // $1 = 4
addi $2, $0, 3;                 // n = 3
addi $3, $0, 0;                 // i = 0;
slt $6, $3, $2;                 // loop_i
beq $6, $0, exit;
addi $4, $0, 0;                 // j = 0
slt $6, $4, $2;                 // loop_j
beq $6, $0, end_j;
addi $5, $0, 0;                 // k = 0
slt $6, $5, $2;                 // loop_k
beq $6, $0, end_k;

//main work, c[i][j] = c[i][j] + a[i][k] * b[k][j]
addu $7, $3, $3;                // $7 = 2i
addu $7, $7, $3                 // $7 = 3i
addu $8, $7, $4;                // $8 = 3i + j
```

```
mul $8, $8, $1                  // $8 = 4(3i+j)
addi $9, $8, 72;                // $9 = C's EA
lw $10, 0($9);                  // $10 = C[EA]
addu $11, $7, $5;               // $11 = 3i + k
mul $11, $11, $1                // $11 = 4(2i+k)
addi $12, $11, 0;               // $12 = A's EA
lw $13, 0($12);                 // $13 = A[EA]
addu $14, $5, $5;               // $14 = 2k
addu $14, $14, $5               // $14 = 3k
addu $15, $14, $4;              // $15 = 2k + j
mul $15, $15, $1                // $15 = 4(2k+j)
addi $16, $15, 36;              // $16 = B's EA
lw $17, 0($16);                 // $17 = B[EA]
mul $18, $17, $13;              // $18 = A[EA] * B[EA]
addu $19, $10, $18;             // $19 = C[EA] + A[EA]B[EA]
sw $19, 0($9);
//end work

addi $5, $5, 1;
j  loop_k;
addi $4, $4, 1;                 // end_k
j  loop_j;
addi $3, $3, 1;                 // end_j
j  loop_i;
//end multiplication
```