Q1.

FUNCTION PERFECT\_SQUARE(NUM)

i 🡨 1

not\_found 🡨 TRUE

While not\_found = TRUE

If i\*i < num

i 🡨 i + 1

Else if i\*i > num

not\_found 🡨 FALSE

highest\_square 🡨 (i-1)\*(i-1)

Else if i\*i = num

not\_found 🡨 FALSE

highest\_square 🡨 i\*i

return(highest\_square)

FUNCTION PERFECT\_SQUARE(NUM,HI,LO)

pos 🡨 (hi+lo)/2

If (num = pos\*pos) OR (hi = lo)

If (hi = lo) AND (pos\*pos > num)

RETURN((pos-1)\*(pos-1))

RETURN(pos\*pos)

Else If pos\*pos > num

RETURN(PERFECT\_SQUARE(num,pos-1,lo))

Else If pos\*pos < num

RETURN(PERFECT\_SQUARE(num,hi,pos+1))

Q3.

B = INPUT Matrix OF LENGTH N

C = INPUT Matrix OF LENGTH N

FUNCTION ADDITION(M1, M2)

For i 🡨 0 to length(N)

For j 🡨 0 to length(N)

M3[i,j] = M1[i,j] + M2[i,j]

RETURN M3

FUNCTION SUBTRACTION(M1, M2)

For I 🡨 0 to length(N)

For j 🡨 0 to length(N)

M3[i,j] = M1[i,j] - M2[i,j]

RETURN M3

FUNCTION MULTIPLICATION(M1, M2)

For i 🡨 0 to length(N) (rows)

For j 🡨 0 to length(N) (columns)

For u 🡨 to length(N)

M3[i,j] = M3[i,j] + (M1[i,u]\*M2[u,j])

RETURN M3

FUNCTION MULTIPLY(M1,NUM)

For i 🡨 0 to length(N)

For j 🡨 0 to length(N)

M2[i,j] = M1[i,j] \* NUM

RETURN M3

A = SUBTRACTION(MULTIPLICATION(B,C),MULTIPLY(ADDITION(B,C),2))