# Task 5 – Pseudocode

## Question: Write the pseudocode corresponding to functions for addition, subtraction and multiplication of two matrices, and then compute A=B\*C –2\*(B+C), where B and C are two quadratic matrices of order n. What is the run-time?

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| --- |
| ADDITION\_MATRICES(matrix1, matrix2)  FOR I <- 0 to length[matrix1]  FOR J <- 0 to length[matrix1]  SUM[i][j] <- matrix1[i][j] + matrix2[i][j]  PRINT\_MATTRICES(SUM) |

O(N^2)

|  |
| --- |
| SUBTRACTION\_MATRICES(matrix1, matrix2)  FOR I <- 0 to length[matrix1]  FOR J <- 0 to length[matrix1]  SUM[i][j] <- matrix1[i][j] - matrix2[i][j]  PRINT\_MATTRICES(SUM) |

O(N^2)

|  |
| --- |
| MULTIPLICATION\_MATRICES(matrix1, matrix2)  FOR I <- 0 to length[matrix1]  FOR J <- 0 to length[matrix1]  FOR K <- 0 to length[matrix1]                          SUM[i][j] = matrix1[i][k] \* matrix2[k][j] |

O(N^3)

|  |
| --- |
| COMPUTE\_MATRICES(matrix1, matrix2)  FOR I <- 0 to length[matrix1]  FOR J <- 0 to length[matrix1]  SUM[i][j] <- (matrix1[i][j] \* matrix2[i][j]) – 2 \* (matrix1 + matrix2)  PRINT\_MATTRICES(SUM) |

O(N^2)