Name \_\_Zhao, Rena\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_05/16/22\_\_\_\_\_\_\_\_\_\_

NetID: \_\_ryz215\_\_\_\_\_\_ Section: \_\_007\_\_\_\_\_\_\_\_\_

**Shape

Description automatically generated with medium confidence**

I have completed this assignment independently:

**Lab 3**

**Total in points** (100 points total): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Professor’s Comments:**

**Part B (skipped Part A due to time constraints)**

* if (N == 32)
  + This if statement covers the 32X32 matrix
  + We go through the matrix in groups of 8 and iterate through each element
  + If not on the diagonal element, we put the element in A[r][c] into B[c][r]
  + Temporarily store the diagonal elements in x0 then the row (and column) number in w1
  + Copy to array B
* else if (N == 64)
  + This else if statement covers the 64X64 matrix
  + We go through the matrix in groups of 8x8 and iterate through each element
  + Store rows with x0 through x7
  + Put first 4 block elements into the top-left of B and repeat for first 4 rows in A
  + Go through columns of A, taking the last 4 elements in A and putting them in x4 through x7
  + Take last 4 elements of B and put them in x0 through x3
  + Put elements we put in x0 through x3 to lower right in B
  + Put elements we put in x4 through x7 to upper right in B
  + Repeat for every group of 8X8
* else
  + This else if statement covers the 61X67 matrix
  + We go through the matrix in groups of 16 and iterate through each element
  + Similar process as 32X32 with diagonals
  + Make sure indices don’t go out of bounds using conditions that check if r < N and c < M
  + Copy to array B