Practice Questions - Pointers

Problem 1:

Write a function that receives arguments: two 2D pointers p, number of rows and number of columns of both matrices and return the product of both matrices.

int Product (int ** matrix1, int ** matrix2, int r1, int c1, int r2, int c2)**

Try to do Matrix multiplication for 3D Matrix also

Problem 2:

Write a user defined function named Upper_half () which takes a two dimensional array, with size N rows and N columns as argument and returns the upper half of the array.

int Upper_half (int** Array, int rows, int columns)**

e.g.,

```
2 3 1 5 0                                  2 3 1 5 0
7 1 5 3 1                                    1 5 3 1
2 5 7 8 1          Output will be:             7 8 1
0 1 5 0 1                                      0 1
3 4 9 1 5                                        5
```

Problem 3:

Write a function that receives three arguments: **(i) a 2D pointer p; (ii) number of rows sizeA; (iii)number of columns sizeB** and return the sum of the diagonal (boundary rows and columns which are shown as black area in the following figure) of the 2D array. Remember you have to calculate sum of values of the array shown as black area in the given figure only and return that sum.

int calDiagonal(int **p, int sizeA, int sizeB)