Question 4:

Code:

'''import numpy as np

A = np.array([[25, 30, 45, 60], [43, 44, 12, 32]])

B = np.array([[12, 21, 32], [42,34, 53], [78,19, 90], [93,37,89]])

def multiply(A:np.array, B:np.array):

    if np.shape(A)[1] != np.shape(B)[0]:

        return "The matrices are not able to be multiplied"

    C = np.zeros([np.shape(A)[0], np.shape(B)[1]])

    for i in range(np.shape(A)[0]):

        for j in range(np.shape(B)[1]):

            for k in range(np.shape(A)[1]):

                C[i][j] += A[i][k]\*B[k][j]

    return C

C=np.matmul(A, B)

print(multiply(A,B))

print(multiply(B, A))

def test(A:np.array, B:np.array, C:np.array):

    if np.array\_equal(C, multiply(A,B)):

        print("Both Matrices are the same")

D = np.array([[12, 32, 41], [43, 54, 12], [12, 32, 45]])

E = np.array([[1, 3, 4], [4, 2, 5], [9, 4, 12]])

F = np.matmul(D, E)

test(A, B, C)

test(D, E, F)

'''

Output of the code: