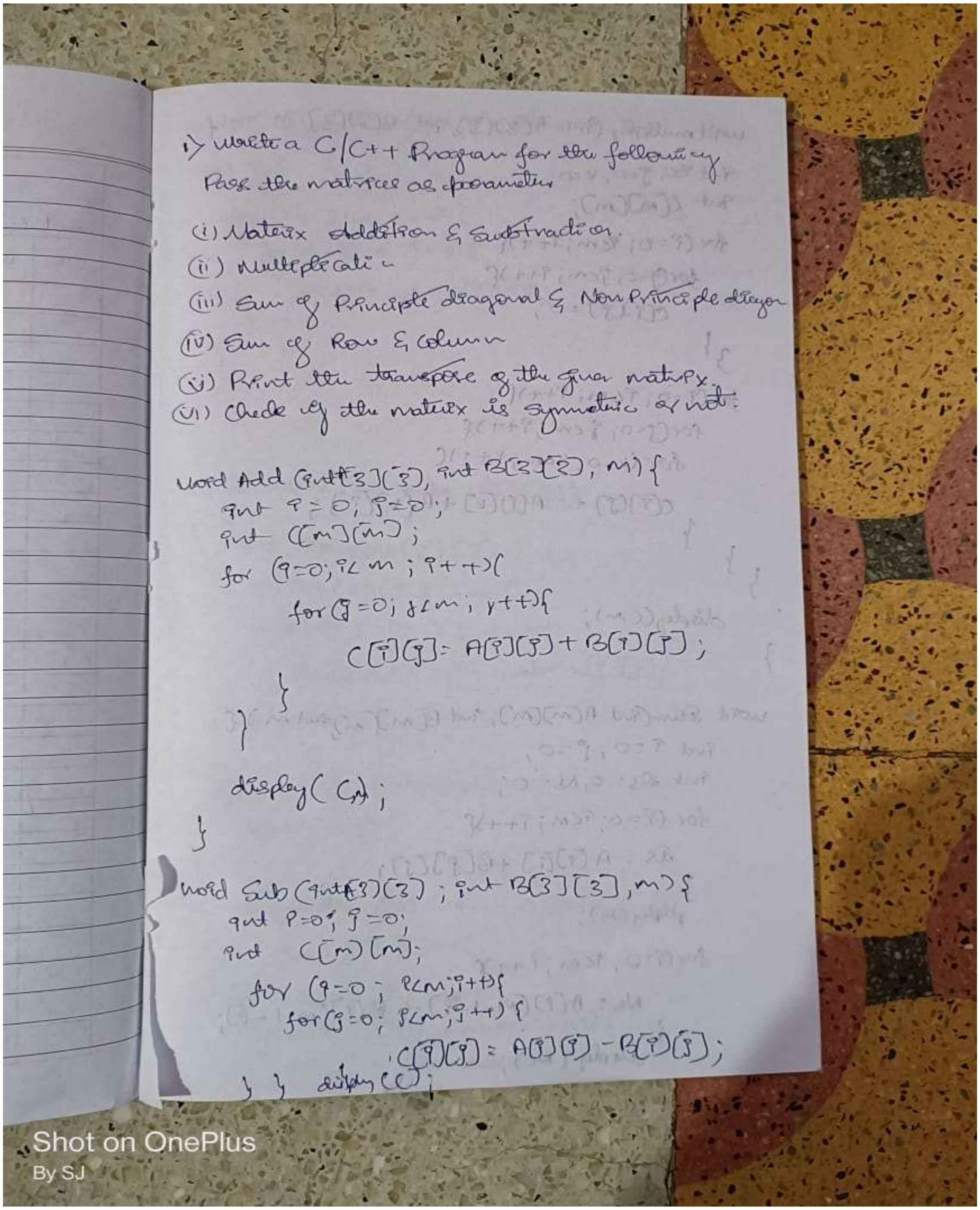


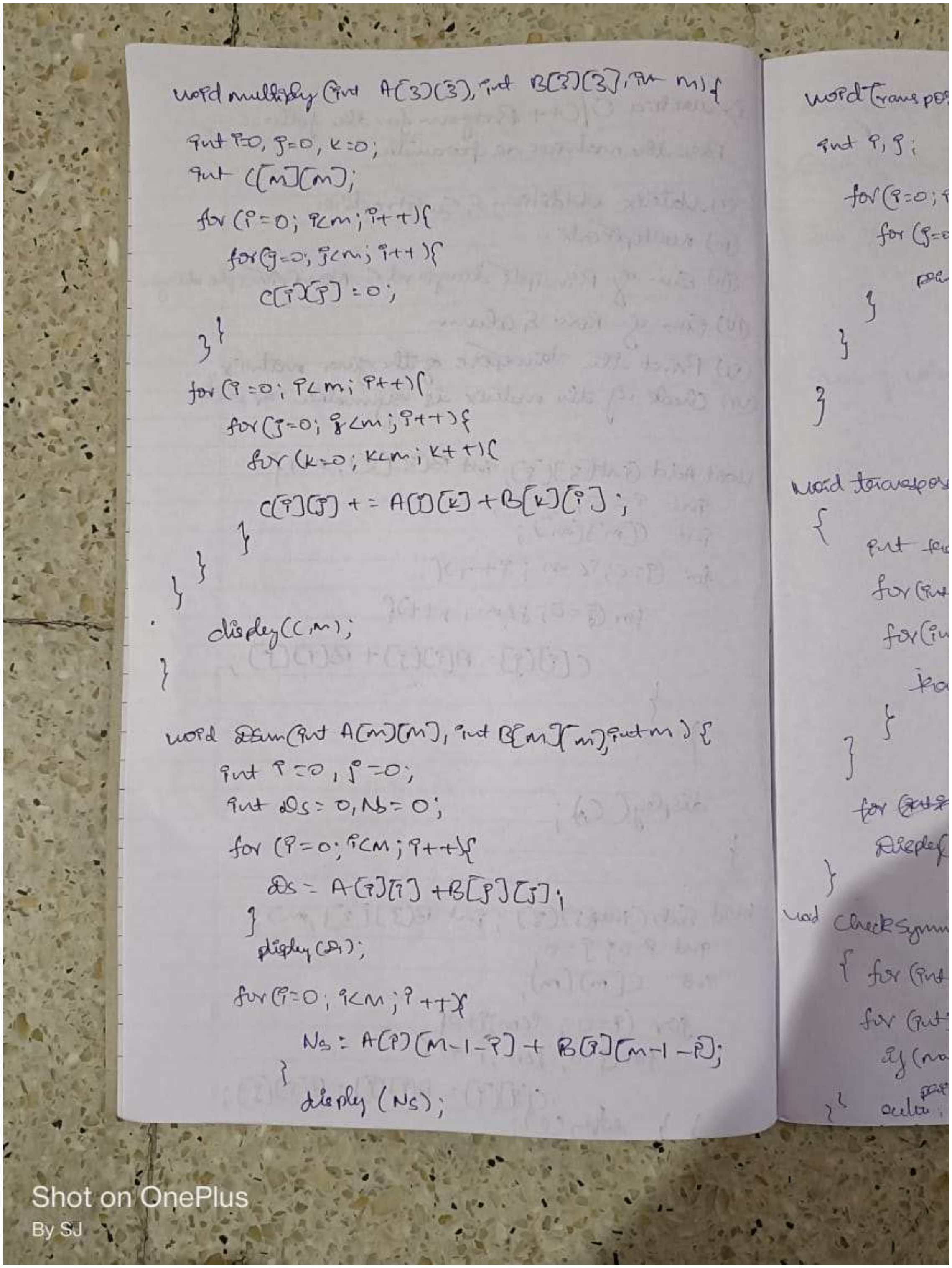
1) Write a C/C++ Program for the following
Pass the matrices as parameter

(i) Matrix Addition & Subtraction.
(ii) Multiplication
(iii) Sum of Principle diagonal & Non Principle diagon
(iv) Sum of Row & Column
(v) Print the transpose of the given matrix.
(vi) Check if the matrix is symmetric or not.

```
void Add (int A[3][3], int B[3][2], m){
    int i = 0, j=0;
    int C[m][m];
    for (i=0; i< m ; i++){
          for (j=0; j<m; j++){
                C[i][j] = A[i][j] + B[i][j];
          }
    }

    display( C,m);
}

void Sub (int A[3][3] ; int B[3][3], m){
    int i=0; j=0;
    int C[m][m];
     for (i=0 ; i<m;i++){
       for(j=0; j<m;j++) {
                    C[i][j] = A[i][j] - B[i][j];
   } }  display(C);
```



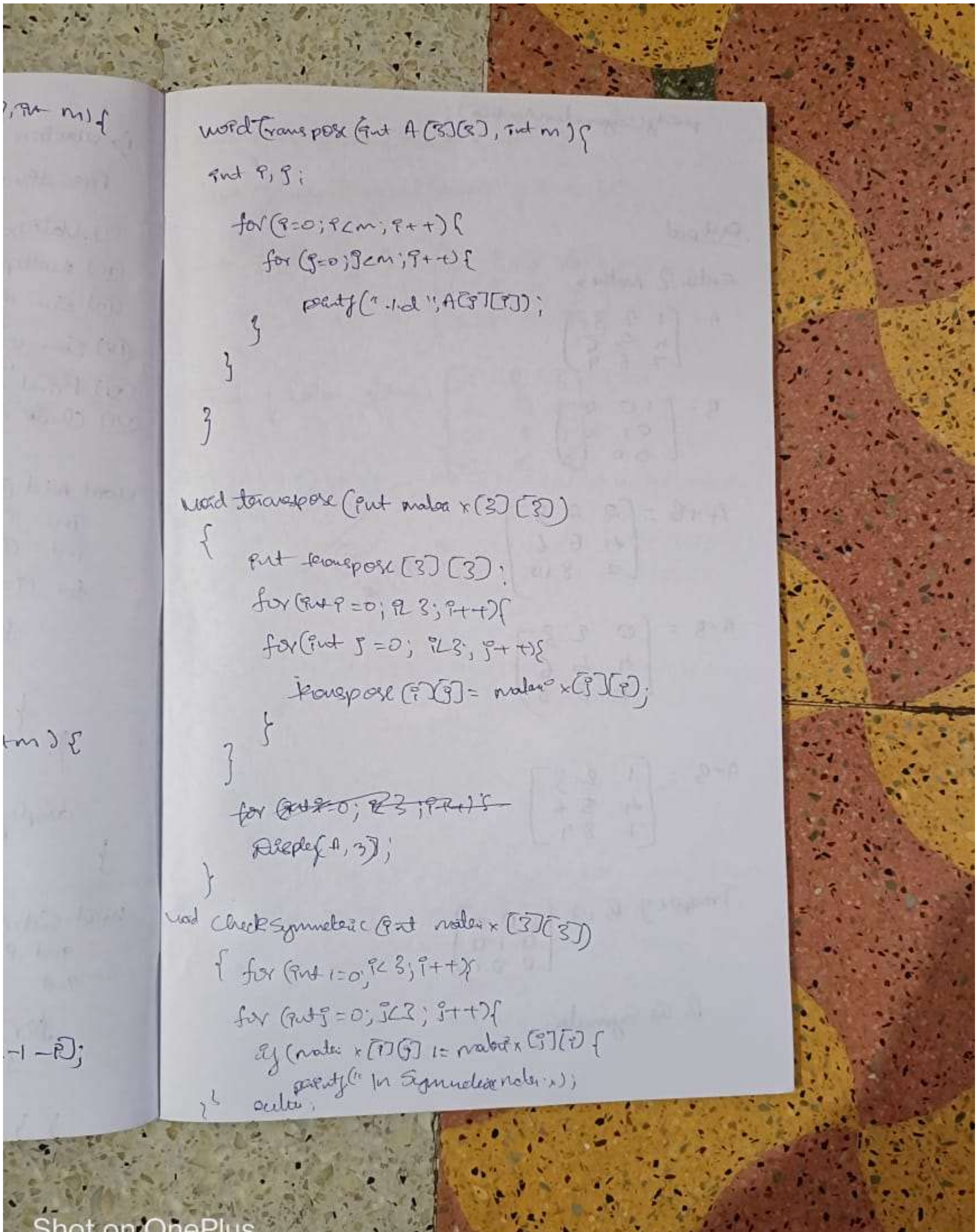
```
void multiply(int A[3][3], int B[3][3], int m){
 int i=0, j=0, k=0;
 int C[m][m];
  for (i=0; i<m; i++){
    for(j=0; j<m; i++ ){
       C[i][j] = 0;
 }}
 for (i=0; i<m; i++){
   for(j=0; j<m; i++){
     for (k=0; k<m; k++){
       C[i][j] += A[i][k] + B[k][i];
     }
   }
}
 display(C,m);
}

void Dsum(int A[m][m], int B[m][m], int m ){
    int i=0, j=0;
    int Ds = 0, Ns = 0;
    for (i=0; i<m; i++){
       Ds = A[i][i] +B[j][j];
    }
    display(Di);

    for(i=0; i<m; i++){
         Ns = A[i][m-1-i] + B[i][m-1-i];
    }
      display (Ns);
```

```
void transpos
 int i, j;
   for(i=0; i
     for (j=0
        pri
     }
   }
 }

void transpos
 {
     int for
     for(int
     for(in
       tra
     }
  }
    for ~~(int i~~
     display
 }
void checksymm
  { for (int
   for (int
    if (ma
  }} return;
```



```
i, int m){

+m){

-1-i];
```

```
void transpose(int A[3][3], int m){
 int i, j;
    for(i=0;i<m;i++){
       for(j=0;j<m;j++){
            printf("%d ",A[j][i]);
       }
    }
}

void transpose(int matrix[3][3])
{
     int transpose[3][3];
     for(int i=0; i<3; i++){
      for(int j=0; j<3; j++){
        transpose[i][j]= matrix[j][i];
      }
   }
     ~~for (int i=0; i<3; i++){~~
     display(A, 3);
}
void checkSymmetric(int matrix[3][3])
  { for(int i=0; i<3; i++){
    for(int j=0; j<3; j++){
     if(matrix[i][j] != matrix[j][i]) {
        printf("\n Symmetric matrix");
 }} return;
```

```
printf("Symmetric Matrix");
```

Output

Enter 2 Matrix

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

$$B = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$A+B = \begin{bmatrix} 2 & 2 & 3 \\ 4 & 6 & 6 \\ 7 & 8 & 10 \end{bmatrix}$$

$$A-B = \begin{bmatrix} 0 & 2 & 3 \\ 4 & 4 & 6 \\ 7 & 8 & 8 \end{bmatrix}$$

$$A*B = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

Transpose of B is $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

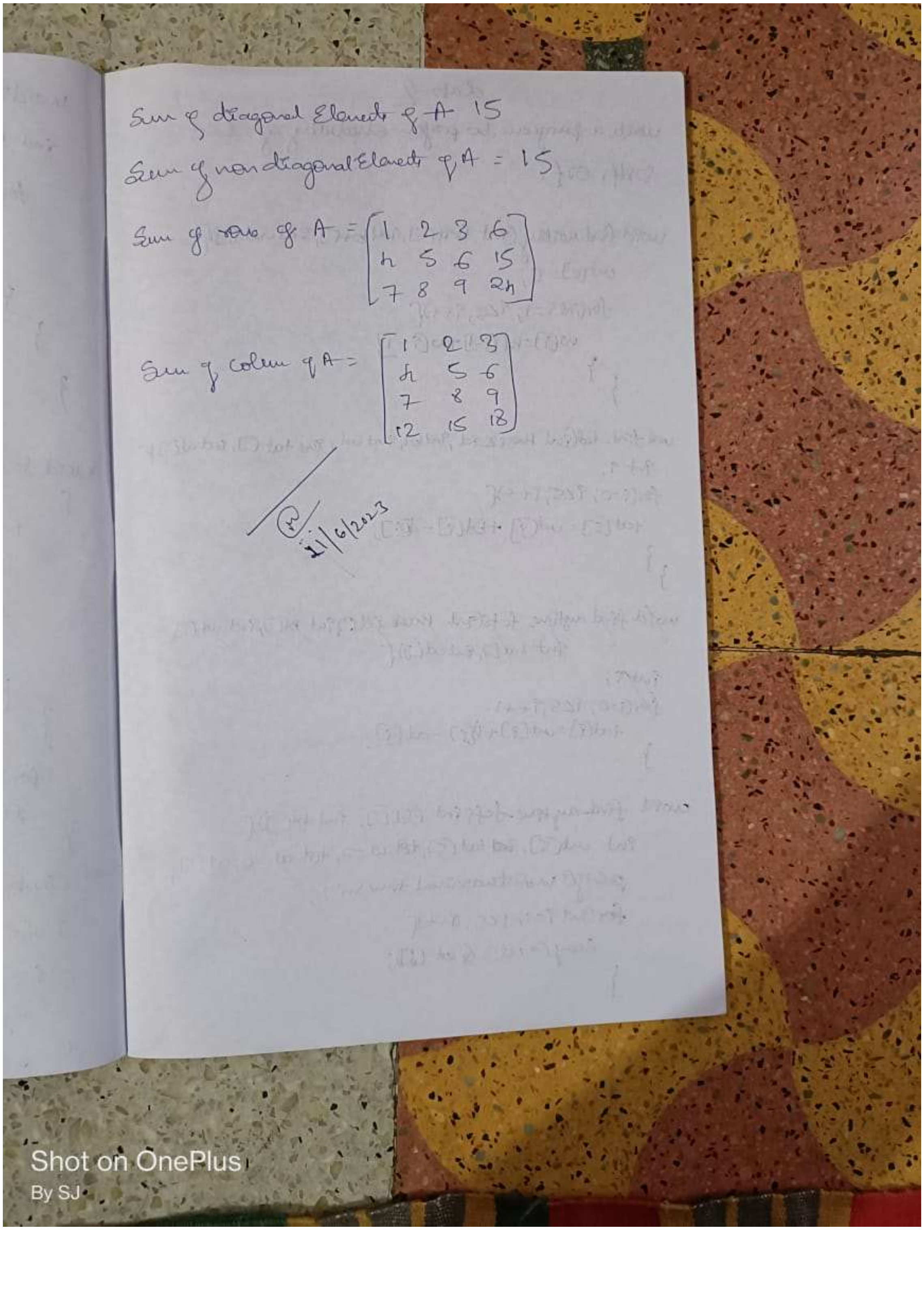
B is Symmetric

Sum of diagon

Sum of nondi

Sum of rows of

Sum of colum



Sum of diagonal Elements of A 15

Sum of non diagonal Elements of A = 15

Sum of rows of A = $\begin{bmatrix} 1 & 2 & 3 & 6 \\ 4 & 5 & 6 & 15 \\ 7 & 8 & 9 & 24 \end{bmatrix}$

Sum of colum of A = $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \\ 12 & 15 & 18 \end{bmatrix}$

21/6/2023