

# Function to add two matrices

```
def add_matrices(a, b):  
    result = [[a[i][j] + b[i][j] for j in range(len(a[0]))] for i in range(len(a))]  
    return result
```

# Function to subtract two matrices

```
def subtract_matrices(a, b):  
    result = [[a[i][j] - b[i][j] for j in range(len(a[0]))] for i in range(len(a))]  
    return result
```

# Function to multiply two matrices

```
def multiply_matrices(a, b):  
    result = [[sum(a[i][k] * b[k][j] for k in range(len(b))) for j in range(len(b[0]))] for i in range(len(a))]  
    return result
```

# Function to transpose a matrix

```
def transpose_matrix(a):  
    result = [[a[j][i] for j in range(len(a))] for i in range(len(a[0]))]  
    return result
```

# Example usage

```
matrix1 = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
```

```
matrix2 = [[9, 8, 7], [6, 5, 4], [3, 2, 1]]
```

```
print("Matrix 1:")
```

```
for row in matrix1:
```

```
    print(row)
```

```
print("Matrix 2:")
```

```
for row in matrix2:
```

```
    print(row)
```

```
print("\nAddition of matrices:")
```

```
for row in add_matrices(matrix1, matrix2):
```

```
    print(row)
```

```
print("\nSubtraction of matrices:")
```

```
for row in subtract_matrices(matrix1, matrix2):
```

```
    print(row)
```

```
print("\nMultiplication of matrices:")
```

```
for row in multiply_matrices(matrix1, matrix2):
```

```
    print(row)
```

```
print("\nTranspose of matrix 1:")
```

```
for row in transpose_matrix(matrix1):
```

```
    print(row)
```