Input in nested loops

```
# Given a list of numbers, create another list containing squares of
these numbers

l =[1, 2, 3, 4]

res = []
for i in range(len(l)):
    print(l[i] * l[i])
    res.append(l[i] * l[i])

1
4
9
16

res

[1, 4, 9, 16]
```

```
## Square function

def square(x):
    return x * x

square(2)

4

l

[1, 2, 3, 4]

# mapping the square values

l1 = list(map(square, l))

l1

[1, 4, 9, 16]

type('1')

str
```

```
## Can we apply the same for list input
# R C
# 1st row
# 2nd row
# ...
# Rth row

# Example:
# 3 4
# 1 2 3 4
# 4 5 6 7
# 7 8 9 10

l = list(map(int, input().split()))
```

```
 3 4
```

```
R = l[0]
C = l[1]

res = []
for i in range(R):
    row = list(map(int, input().split()))
    res.append(row)
print(res)
```

```
 1 2 3 4
 4 5 6 7
 7 8 9 10
```

```
[[1, 2, 3, 4], [4, 5, 6, 7], [7, 8, 9, 10]]
```

```
l = map(int, input().split())
type(l)
```

```
 1 2
```

```
map
```

```
list(l)
```

```
[1, 2]
```

```
R = l[0]
C = l[1]
```

```
print(R, C)
```

```
3 4
```

```
# l1 = input().split()
```

```
# l1
```

```
# Map Function for taking input
```

```
# Question 1: Sum of 2D matrices
```

```
# Total runs scored by Sachin
```

```
runs = [[120, 30, 50], [248, 200, 100], [100, 50, 60]]
```

```
for i in range(len(runs)):
    print(runs[i])
    print(sum(runs[i]))
```

```
[120, 30, 50]
200
[248, 200, 100]
548
[100, 50, 60]
210
```

```
total = 0
for i in range(len(runs)):
    total += sum(runs[i])
total
```

```
958
```

```
# sum(runs)
```

```
# Question 2: Print the sum in ODI, Test, T20 matches separately
```

```
runs
```

```
[[120, 30, 50], [248, 200, 100], [100, 50, 60]]
```

```
for i in range(len(runs)):
    print(sum(runs[i]))
```

```
200
548
210
```

```
runs
```

```
[[120, 30, 50], [248, 200, 100], [100, 50, 60]]
```

```
# Question 3: Print the max runs in ODI, Test, T20 matches separately

for i in range(len(runs)):
    print(max(runs[i]))
```

```
120
248
100
```

```
## Question 4: Given 2 matrices of same size R*C, add them

mat1 = [
        [1, 2, 3],
        [4, 5, 6],
        [7, 8, 9],
        [10, 11, 12]
]

mat2 = [
        [-1, 2, 3],
        [4, -5, 6],
        [7, 8, -9],
        [10, 11, 12]
]

# Traversing on mat1

for i in range(len(mat1)):
    for j in range(len(mat1[0])):
        print(mat1[i][j], end=' ')
    print()
```

```
1 2 3
4 5 6
```

```
7 8 9
10 11 12
```

```
# Traversing on mat2
```

```
for i in range(len(mat2)):
    for j in range(len(mat2[0])):
        print(mat2[i][j], end=' ')
    print()
```

```
-1 2 3
4 -5 6
7 8 -9
10 11 12
```

```
for i in range(len(mat2)):
    for j in range(len(mat2[0])):
        print(mat1[i][j], end=' ')
    print()
```

```
1 2 3
4 5 6
7 8 9
10 11 12
```

```
## Adding 2 matrix
```

```
for i in range(len(mat2)):
    for j in range(len(mat2[0])):
        print(mat1[i][j] + mat2[i][j], end=' ')
    print()
```

```
0 4 6
8 0 12
14 16 0
20 22 24
```

```
# Make a list after adding them
```

```
res = []
for i in range(len(mat1)):
    row = []
    for j in range(len(mat1[0])):
        row.append(mat1[i][j] + mat2[i][j])
    res.append(row)
print(res)
```

```
[[0, 4, 6], [8, 0, 12], [14, 16, 0], [20, 22, 24]]
```

```
for i in range(2):
    for j in range(2):
        print(i, j)
```

```
0 0
0 1
1 0
1 1
```

```
# Checking Equal
```

```
mat1 = [
        [1, 2, 3],
        [4, 5, 6],
        [7, 8, 9],
        [10, 11, 12]
]

mat2 = [
        [1, 2, 3],
        [4, 5, -6],
        [7, 8, 9],
        [10, 11, 12]
]

mat1 == mat2
```

```
False
```

```
# Print and find sum on the main diagonal
```

```
# Transpose of Matrix
```