

Sum and Prod

sum

The *sum* tool returns the sum of array elements over a given axis.

```
import numpy

my_array = numpy.array([ [1, 2], [3, 4] ])

print numpy.sum(my_array, axis = 0)      #Output : [4 6]
print numpy.sum(my_array, axis = 1)      #Output : [3 7]
print numpy.sum(my_array, axis = None)   #Output : 10
print numpy.sum(my_array)                #Output : 10
```

By default, the axis value is **None** . Therefore, it performs a sum over all the dimensions of the input array.

prod

The *prod* tool returns the product of array elements over a given axis.

```
import numpy

my_array = numpy.array([ [1, 2], [3, 4] ])

print numpy.prod(my_array, axis = 0)      #Output : [3 8]
print numpy.prod(my_array, axis = 1)      #Output : [ 2 12]
print numpy.prod(my_array, axis = None)   #Output : 24
print numpy.prod(my_array)                #Output : 24
```

By default, the axis value is **None** . Therefore, it performs the product over all the dimensions of the input array.

Task

You are given a 2-D array with dimensions $N \times M$.
Your task is to perform the *sum* tool over axis **0** and then find the *product* of that result.

Input Format

The first line of input contains space separated values of N and M .
The next N lines contains M space separated integers.

Output Format

Compute the sum along axis **0**. Then, print the product of that sum.

Sample Input

```
2 2
1 2
3 4
```

Sample Output

```
24
```

Explanation

The sum along axis 0 = ~~4~~ 6]

The product of this sum = ~~24~~