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 NXM.
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