



Array Mathematics ★

107/115 challenges solved

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Problem

Submissions

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Editorial

Basic mathematical functions operate element-wise on arrays. They are available both as operator overloads and as functions in the NumPy module.

```
import numpy

a = numpy.array([1,2,3,4], float)
b = numpy.array([5,6,7,8], float)

print a + b           #[ 6.  8. 10. 12.]
print numpy.add(a, b)  #[ 6.  8. 10. 12.]

print a - b           #[-4. -4. -4. -4.]
print numpy.subtract(a, b) #[-4. -4. -4. -4.]

print a * b           #[ 5. 12. 21. 32.]
print numpy.multiply(a, b)  #[ 5. 12. 21. 32.]

print a / b           #[ 0.2      0.33333333  0.42857143  0.5      ]
print numpy.divide(a, b)  #[ 0.2      0.33333333  0.42857143  0.5      ]

print a % b           #[ 1.  2.  3.  4.]
print numpy.mod(a, b)    #[ 1.  2.  3.  4.]

print a**b            #[ 1.00000000e+00  6.40000000e+01  2.18700000e+03  6.55360000e+04]
print numpy.power(a, b)  #[ 1.00000000e+00  6.40000000e+01  2.18700000e+03  6.55360000e+04]
```

Task

You are given two integer arrays, **A** and **B** of dimensions $N \times M$.

Your task is to perform the following operations:

1. Add (**A** + **B**)
2. Subtract (**A** - **B**)
3. Multiply (**A** * **B**)
4. Integer Division (**A** / **B**)
5. Mod (**A** % **B**)
6. Power (**A** ** **B**)

Note

There is a method `numpy.floor_divide()` that works like `numpy.divide()` except it performs a floor division.

Input Format

The first line contains two space separated integers, **N** and **M**.

The next **N** lines contains **M** space separated integers of array **A**.

The following ***N*** lines contains ***M*** space separated integers of array ***B***.

Output Format

Print the result of each operation in the given order under **Task**.

Sample Input

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

Sample Output

```
[[ 6  8 10 12]]
[[-4 -4 -4 -4]]
[[ 5 12 21 32]]
[[0 0 0 0]]
[[1 2 3 4]]
[[  1  64 2187 65536]]
```

Use `//` for division in Python 3.

[Change Theme](#)

Language

Python 3



```
1 import numpy as np
2
3 n, m = map(int, input().split())
4
5 # Read array A
6 A = np.array([input().split() for _ in range(n)], int)
7 # Read array B
8 B = np.array([input().split() for _ in range(n)], int)
9
10 # Perform operations
11 print(A + B)
12 print(A - B)
13 print(A * B)
14 print(A // B)
15 print(A % B)
16 print(A ** B)
17
```

⬆️ Upload Code as File

☐ Test against custom input


Run Code

Submit Code

You have earned 20.00 points!

107/115 challenges solved.

93%





Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

✔️ Test case 0

✔️ Test case 1 

✔️ Test case 2 

Compiler Message

Success

Input (stdin)

1	1 4
2	1 2 3 4
3	5 6 7 8

Expected Output

1	[[6 8 10 12]]
2	[[-4 -4 -4 -4]]
3	[[5 12 21 32]]
4	[[0 0 0 0]]

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