Array Mathematics ★

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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 NXM.

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 Python 3

```
import numpy as np

if __name__ == '__main__':
    n, m = tuple(map(int, input().split()))

    data = [list(map(int, input().split())) for _ in range(n)]
    a = np.array(data)

    data = [list(map(int, input().split())) for _ in range(n)]
    b = np.array(data)

    print(np.add(a, b))
    print(np.subtract(a, b))
    print(np.multiply(a, b))
    print(a // b)
    print(a % b)
    print(a ** b)

```

Line: 11 Col: 5

Upload Code as File Test against custom input Run Code Submit Code

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67%

Congratulations

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