Array Mathematics

HackerRank

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.