Sphere online judge (/)

VFMUL - Very Fast Multiplication

#simple-math (/problems/tag/simple-math) #big-numbers (/problems/tag/big-numbers) #karatsuba (/problems/tag/karatsuba)

Multiply the given numbers.

Input

n [the number of multiplications <= 101]

l1 l2 [numbers to multiply (at most 300000 decimal digits each)]

Text grouped in [ ] does not appear in the input file.

Output

The results of multiplications.

Example

```
Input:
5
4 2
123 43
324 342
0 12
9999 12345

Output:
8
5289
110808
0
123437655
```

Warning: large Input/Output data, be careful with certain languages

Submit solution! (/submit/VFMUL/)

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tarun_28 (/users/tarun_28): 2019-12-09 13:46:27
Got to know after 2 WA:
=>PyPy is faster than cpython.
=>Don't even think of using BigInteger class in JAVA

sagar_june97p (/users/sagar_june97p): 2019-01-10 08:04:02
My first FFT problem.

mindrolin (/users/mindrolin): 2018-11-25 13:56:09
If you use Python (both 2 and 3), choose PyPy interpreter if you don't want to get TLE

phoemur (/users/phoemur): 2018-10-14 04:21:49
In C++, even boost/multiprecision/cpp_int will TLE...

I solved using Fast Fourier Transform Convolution...
But mine is still inefficient with 0.50s runtime.

@rds_98 I don't know if it is OK to put the link here.
Just Google it...

Last edit: 2018-10-14 04:51:14

aneesh_k_14 (/users/aneesh_k_14): 2018-08-20 18:54:01
take pi = 3.14159265358979323846

rds_98 (/users/rds_98): 2018-07-28 14:36:30
Can someone Please put his/her solution to Github?

Charlie Yu (/users/charlie_yu): 2018-06-07 18:57:04
When you get AC easily with 10 lines of code in Python 3 but can't even past MUL with carefully tailored C++ code you wrote for 5 hours

aditya_rev (/users/aditya_rev): 2018-05-06 19:28:20
My 100th, and solved it with PYPY. Not happy at all:"(

mahilewets (/users/mahilewets): 2017-08-25 20:08:31
Use PyPy if you are Python
My Python 3.5 TLE code AC just after changing PyPy interpreter

bnzhaxx (/users/bnzhaxx): 2017-04-24 23:31:01
And bigInteger is slow slow slow slow slow...

Submit solution! (/submit/VFMUL/)

Added by:	Darek Dereniowski (/users/deren)
Date:	2004-11-27
Time limit:	3s
Source limit:	50000B
Memory limit:	1536MB
Cluster:	Cube (Intel G860) (/clusters/)
Languages:	All except: NODEJS PERL6
Resource:	PAL