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Game of Numbers

Problem code: GNUM

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Mr. Yagami is playing a game of numbers. He has two arrays, each of size N denoted by A_1, A_2, \dots, A_N and B_1, B_2, \dots, B_N .

Now, he has to make a move each minute. Let us maintain two sets $S1$ and $S2$ which are empty initially. In one move, first he'll pick a pair of indexes (i, j) such that it's already not present in $S1$. Also, $B_j > A_i$ and $\text{GCD}(A_i, B_j)$ is not 1. Further, he'll pick another pair of indices (p, q) such that it's already not present in $S2$. Also, $B_p < A_q$ and $\text{GCD}(A_q, B_p)$ is not 1. Also, $\text{GCD}(A_q, B_p)$ should not be coprime to $\text{GCD}(A_i, B_j)$. And, he'll add both pair of indices to $S1$ and $S2$, respectively.

Help Mr. Yagami by printing the largest number of moves he can perform.

Input

First line contain T , the number of testcases. Each testcase consists of N in one line, followed by two lines of N space separated integers each, denoting arrays A and B , respectively.

Output

For each testcase, print the maximum number of moves Mr. Yagami can make, in one line.

Constraints

- $1 \leq T \leq 10$
- $1 \leq N \leq 400$
- $1 \leq A_i, B_i \leq 10^9$

Example

Input:

```
2
4
2 5 6 14
3 4 7 10
2
2 3
5 7
```

Output:

```
3
0
```

Explanation

First testcase:

Following are the possible moves denoting by (i, j) and (p, q)

1st move: $(1, 2)$ and $(2, 3)$

2nd move: $(1, 4)$ and $(2, 4)$

3rd move: $(3, 4)$ and $(4, 4)$

In any possible combination not more than 3 moves are possible.

Second testcase:

No move is possible.

Author: darkshadows

SUCCESSFUL SUBMISSIONS

User	Time	Mem	Lang	Solution
ACRush	2.76	158.8M	C++ 4.3.2	View
flaminrage	4.50	4M	C++ 4.8.1	View
rms4	4.97	205.1M	C++ 4.8.1	View
allin	5.25	3.4M	C++ 4.8.1	View
lyrically	5.25	72.1M	C++11	View
anton_lunyov	5.34	4.2M	C++11	View
shenjiaqi	5.36	3.5M	C++11	View
sansirowaltz	5.57	161.4M	PAS fpc	View
manofsteel	5.86	6.8M	C++ 4.3.2	View
kennethsnow	5.98	339.8M	C++11	View
johnathan79717	6.18	3.4M	C++11	View
ruthles	6.18	23.2M	C++ 4.8.1	View

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Tags	darkshadows
Date Added:	23-05-2014
Time Limit:	1 sec
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Languages:	ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.8.1, CPP11, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAR, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYTH, PYTH 3.1.2, RUBY, SCALA, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

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Comments

nobeita @ 4 Jul 2014 03:48 PM

3rd move should be (3,4) and (4,4). in testcase 1 ..??

darkshadows @ 4 Jul 2014 05:55 PM

@nobeita: It will be updated soon. Thanks!

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The time now is: 08:36:42 AM
Your Ip: 182.73.169.22

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CodeChef was created as a platform to help programmers make it big in the world of algorithms, computer programming and programming contests. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

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The Go for Gold Initiative was launched about a year after CodeChef was inception, to help prepare Indian students for the **ACM ICPC** World Finals competition. In the run up to the **ACM ICPC** competition, the Go for Gold initiative uses CodeChef as a platform to train students for the **ACM ICPC** competition via multiple warm up contests. As an added incentive the

Go for Gold initiative is also offering over Rs.8 lacs to the Indian team that beats the 29th position at the **ACM ICPC** world finals. Find out more about the Go for Gold and the **ACM ICPC** competition [here](#).