

A. 03. TSP

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Một người du lịch xuất phát từ thành phố thứ nhất muôn đi thăm quan tất cả $n - 1$ thành phố khác. mỗi thành phố đúng một lần, rồi quay trở lại thành phố xuất phát.

Yêu cầu: Cho biết chi phí đi lại giữa các thành phố, hãy giúp người du lịch tìm hành trình với tổng chi phí là nhỏ nhất.

Input

Dòng đầu tiên chứa hai số nguyên dương n, m cách nhau bởi dấu cách ($n \leq 20, m < 400$).

m dòng tiếp theo mỗi dòng chứa ba số nguyên dương i, j, c ($i, j \leq n, c \leq 10^6$) biều thị chi phí đi trực tiếp từ thành phố i đến thành phố j là c .

Lưu ý: nếu từ thành phố i đến thành phố j nào không mô tả chi phí đi lại thì có nghĩa là không có đường đi trực tiếp từ i đến j .

Output

Ghi ra duy nhất một số là tổng chi phí hành trình nhỏ nhất tìm được.

Example

input	<input type="button" value="Copy"/>
2 2 1 2 3 2 1 2	
output	<input type="button" value="Copy"/>
5	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
95168066	Oct/11/2020 06:01	Perfect result: 100 points
95167609	Oct/11/2020 05:47	Partial result: 65 points
95167309	Oct/11/2020 05:37	Partial result: 45 points
95167261	Oct/11/2020 05:35	Partial result: 40 points
95167209	Oct/11/2020	Partial result: 45

	05:33	points
95167126	Oct/11/2020 05:30	Partial result: 45 points
95144129	Oct/10/2020 20:35	Partial result: 10 points
95097547	Oct/10/2020 17:59	Partial result: 35 points
95094227	Oct/10/2020 17:55	Partial result: 35 points
95092912	Oct/10/2020 17:53	Partial result: 35 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:46:37^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



B. 03. KNAPSAC

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Một nhà thám hiểm cần đem theo một cái túi có trọng lượng không quá b . Có n đồ vật có thể đem theo. Đồ vật thứ j có trọng lượng a_j và giá trị sử dụng c_j . Hỏi nhà thám hiểm cần đem theo những đồ vật nào để cho tổng giá trị sử dụng là lớn nhất mà tổng trọng lượng đồ vật mang theo cái túi không vượt quá b ?

Input

Dòng đầu tiên chứa hai số nguyên dương n, b ($n \leq 30, b \leq 10^6$).

Dòng thứ j trong số n dòng tiếp theo mỗi dòng ghi ra hai số nguyên dương $a_j, c_j \leq 10^6$.

Output

Ghi ra duy nhất một số là tổng giá trị lớn nhất tìm được của các đồ vật cho vào túi.

Example

input

```
2 6
4 2
3 2
```

output

```
2
```

ĐH Bách Khoa Hà Nội
Private
Participant
★

→ **About Group**



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant

★

→ **Submit?**

Language:

Choose file: No file chosen

→ **Last submissions**

Submission	Time	Verdict
95446389	Oct/13/2020 19:38	Perfect result: 100 points
95445885	Oct/13/2020 19:31	Partial result: 80 points
95445830	Oct/13/2020 19:31	Partial result: 75 points
95445047	Oct/13/2020 19:21	Partial result: 80 points
95444964	Oct/13/2020	Partial result: 80

	19:20	points
95444257	Oct/13/2020 19:12	Partial result: 80 points
95442097	Oct/13/2020 18:46	Partial result: 10 points
95442002	Oct/13/2020 18:45	Partial result: 10 points
95358294	Oct/12/2020 18:42	Partial result: 75 points
95358228	Oct/12/2020 18:41	Partial result: 70 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:46:55^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



C. 03. BCA

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

At the beginning of the semester, the head of a computer science department D have to assign courses to teachers in a balanced way. The department D has m teachers $T = \{1, 2, \dots, m\}$ and n courses $C = \{1, 2, \dots, n\}$. Each teacher $t \in T$ has a preference list which is a list of courses he/she can teach depending on his/her specialization. We known a list of pairs of conflicting two courses that cannot be assigned to the same teacher as these courses have been already scheduled in the same slot of the timetable. The load of a teacher is the number of courses assigned to her/him. How to assign n courses to m teacher such that each course assigned to a teacher is in his/her preference list, no two conflicting courses are assigned to the same teacher, and the maximal load is minimal.

Input

The input consists of following lines

- Line 1: contains two integer m and n ($1 \leq m \leq 10, 1 \leq n \leq 30$)
- Line $i+1$: contains an positive integer k and k positive integers indicating the courses that teacher i can teach ($\forall i = 1, \dots, m$)
- Line $m + 2$: contains an integer k
- Line $i + m + 2$: contains two integer i and j indicating two conflicting courses ($\forall i = 1, \dots, k$)

Output

The output contains a unique number which is the maximal load of the teachers in the solution found and the value -1 if not solution found.

Example

input

```
4 12
5 1 3 5 10 12
5 9 3 4 8 12
6 1 2 3 4 9 7
7 1 2 3 5 6 10 11
25
1 2
1 3
1 5
2 4
2 5
2 6
3 5
3 7
3 10
4 6
4 9
5 6
5 7
5 8
6 8
6 9
7 8
7 10
7 11
8 9
8 11
8 12
9 12
10 11
11 12
```

output

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
95801050	Oct/17/2020 18:17	Perfect result: 100 points
95800679	Oct/17/2020 18:15	Partial result: 60 points

→ Your points

	Points
A	100



B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:47:23^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



D. 03. CBUS

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

There are n passengers $1, 2, \dots, n$. The passenger i want to travel from point i to point $i + n$ ($i = 1, 2, \dots, n$). There is a bus located at point 0 and has k places for transporting the passengers (it means at any time, there are at most k passengers on the bus). You are given the distance matrix c in which $c(i, j)$ is the traveling distance from point i to point j ($i, j = 0, 1, \dots, 2n$). Compute the shortest route for the bus, serving n passengers and coming back to point 0 without visiting any point more than once (except for the point 0).

Input

Line 1 contains n and k ($1 \leq n \leq 11, 1 \leq k \leq 10$). Line $i + 1$ ($i = 1, 2, \dots, 2n + 1$) contains the $(i - 1)^{th}$ line of the matrix c (rows and columns are indexed from $0, 1, 2, \dots, 2n$).

Output

Unique line contains the length of the shortest route.

Example

input

```
3 2
0 8 5 1 10 5 9
9 0 5 6 6 2 8
2 2 0 3 8 7 2
5 3 4 0 3 2 7
9 6 8 7 0 9 10
3 8 10 6 5 0 2
3 4 4 5 2 2 0
```

[Copy](#)

output

```
25
```

[Copy](#)

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: [GNU G++17 7.3.0](#)

Choose file: [Choose File](#) No file chosen

[Submit](#)

→ Last submissions

Submission	Time	Verdict
95438368	Oct/13/2020 18:03	Perfect result: 100 points
95438152	Oct/13/2020 18:00	Partial result: 40 points
95437745	Oct/13/2020 17:56	Partial result: 80 points
95437429	Oct/13/2020 17:53	Partial result: 80 points
95437338	Oct/13/2020	Partial result: 80



	17:52	points
95437289	Oct/13/2020 17:51	Partial result: 80 points
95437239	Oct/13/2020 17:51	Partial result: 0 points
95393679	Oct/13/2020 08:34	Partial result: 60 points
95393471	Oct/13/2020 08:30	Partial result: 0 points
95393431	Oct/13/2020 08:30	Wrong answer on test 1

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:47:33^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



E. 03. BACP

time limit per test: 5 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

The BACP is to design a balanced academic curriculum by assigning periods to courses in a way that the academic load of each period is balanced. There are N courses $1, 2, \dots, N$ that must be assigned to M periods $1, 2, \dots, M$. Each course i has credit c_i and has some courses as prerequisites. The load of a period is defined to be the sum of credits of courses assigned to that period. The prerequisites information is represented by a matrix $A_{N \times N}$ in which $A_{i,j} = 1$ indicates that course i must be assigned to a period before the period to which course j is assigned. Compute the assignment such that the maximum load for all periods is minimal.

Input

- Line 1 contains N and M ($2 \leq N \leq 16, 2 \leq M \leq 5$)
- Line 2 contains c_1, c_2, \dots, c_N
- Line $i + 2$ ($i = 1, \dots, N$) contains the i^{th} line of the matrix A

Output

Unique line contains the maximum load for all periods of the solution found

Example

input	<input type="button" value="Copy"/>
6 2	
4 4 4 4 2 4	
0 0 0 0 0 0	
0 0 0 0 0 0	
0 0 0 0 0 0	
0 0 1 0 0 0	
0 0 1 0 0 0	
1 0 0 0 0 0	
output	<input type="button" value="Copy"/>
12	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học Bách Khoa

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
95789071	Oct/17/2020 17:41	Perfect result: 100 points
95788810	Oct/17/2020 17:40	Perfect result: 100 points
95772431	Oct/17/2020 16:59	Perfect result: 100 points
95771365	Oct/17/2020 16:57	Partial result: 40 points
95769656	Oct/17/2020	Partial result: 20



→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov
The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:47:49^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



F. 03. TAXI

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

There are n passengers $1, 2, \dots, n$. The passenger i want to travel from point i to point $i + n$ ($i = 1, 2, \dots, n$). There is a taxi located at point 0 for transporting the passengers. Given the distance matrix $c(2n + 1) * (2n + 1)$ in which $c(i, j)$ is the traveling distance from point i to point j ($i, j = 0, 1, \dots, 2n$) Compute the shortest route for the taxi, serving n passengers and coming back to point 0 such that at any moment, there are no more than one passenger in the taxi, and no point is visited more than once (except for point 0, which can be visited up to twice).

Input

Line 1 contains n ($1 \leq n \leq 11$). Line $i + 1$ ($i = 1, 2, \dots, 2n + 1$) contains the i th line of the matrix c .

Output

Unique line contains the length of the shortest route.

Example

input

```
2
0 8 5 1 10
5 0 9 3 5
6 6 0 8 2
2 6 3 0 7
2 5 3 4 0
```

[Copy](#)

output

```
17
```

[Copy](#)

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: [GNU G++17 7.3.0](#)

Choose file: [Choose File](#) No file chosen

[Submit](#)

→ Last submissions

Submission	Time	Verdict
95663809	Oct/16/2020 16:16	Perfect result: 100 points
95663702	Oct/16/2020 16:14	Partial result: 20 points
95662971	Oct/16/2020 16:06	Partial result: 20 points
95662194	Oct/16/2020 15:57	Partial result: 20 points
95662139	Oct/16/2020	Compilation error



	15:56	
95661834	Oct/16/2020 15:52	Partial result: 20 points
95661796	Oct/16/2020 15:52	Partial result: 20 points
95661665	Oct/16/2020 15:50	Partial result: 20 points
95661534	Oct/16/2020 15:48	Partial result: 20 points
95661443	Oct/16/2020 15:47	Partial result: 20 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:47:50^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



G. 03. CVRPCOUNT

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

A fleet of K identical trucks having capacity Q need to be scheduled to delivery pepsi packages from a central depot 0 to clients $1, 2, \dots, n$. Each client i requests $d[i]$ packages.

- Each client is visited exactly by one route
- Total number of packages requested by clients of each truck cannot exceed its capacity
- Each truck must visit at least one client

Goal

- Compute number R of solutions

Note that: the orders of clients in a route is important, e.g., routes $0 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 0$ and $0 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 0$ are different.

Input

- Line 1: n, K, Q ($2 \leq n \leq 10, 1 \leq K \leq 5, 1 \leq Q \leq 20$)
- Line 2: $d[1], \dots, d[n]$ ($1 \leq d[i] \leq 10$)

Output

$R \bmod 10^9 + 7$

Example

input	<input type="button" value="Copy"/>
3 2 4 3 2 1	
output	<input type="button" value="Copy"/>
4	

Note

There are 4 solutions

- $\text{route}[1] = 0 \rightarrow 1 \rightarrow 0$ and $\text{route}[2] = 0 \rightarrow 2 \rightarrow 3 \rightarrow 0$
- $\text{route}[1] = 0 \rightarrow 1 \rightarrow 3 \rightarrow 0$ and $\text{route}[2] = 0 \rightarrow 2 \rightarrow 0$
- $\text{route}[1] = 0 \rightarrow 1 \rightarrow 0$ and $\text{route}[2] = 0 \rightarrow 3 \rightarrow 2 \rightarrow 0$
- $\text{route}[1] = 0 \rightarrow 2 \rightarrow 0$ and $\text{route}[2] = 0 \rightarrow 3 \rightarrow 1 \rightarrow 0$

Submission	Time	Verdict
97131634	Oct/30/2020 03:44	Perfect result: 100 points
97108605	Oct/29/2020 18:47	Partial result: 20 points
97106987	Oct/29/2020 18:29	Partial result: 20 points
97106683	Oct/29/2020 18:25	Partial result: 20 points

ĐH Bách Khoa Hà Nội
Private
Participant


About Group


Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201
Contest is running
10 days
Contestant

→ Submit?
Language: <input type="button" value="GNU G++17 7.3.0"/>
Choose file: <input type="button" value="Choose File"/> No file chosen
<input type="button" value="Submit"/>

→ Last submissions
Submission
97131634
Oct/30/2020 03:44
Perfect result: 100 points
97108605
Oct/29/2020 18:47
Partial result: 20 points
97106987
Oct/29/2020 18:29
Partial result: 20 points
97106683
Oct/29/2020 18:25
Partial result: 20 points



→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:08^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



H. 03. CVRP OPT

time limit per test: 1.5 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

A fleet of K identical trucks having capacity Q need to be scheduled to delivery pepsi packages from a central depot 0 to clients $1, 2, \dots, n$. Each client i requests $d[i]$ packages. The distance from location i to location j is $c[i, j]$, $0 \leq i, j \leq n$. A delivery solution is a set of routes: each truck is associated with a route, starting from depot, visiting some clients and returning to the depot for delivering requested pepsi packages such that:

- Each client is visited exactly by one route
- Total number of packages requested by clients of each truck cannot exceed its capacity
- Each truck must visit at least one client

Goal

- Find a solution having minimal total travel distance

Note that: the orders of clients in a route is important, e.g., routes $0 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 0$ and $0 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 0$ are different.

Input

- Line 1: n, K, Q ($2 \leq n \leq 12, 1 \leq K \leq 5, 1 \leq Q \leq 50$)
- Line 2: $d[1], \dots, d[n]$ ($1 \leq d[i] \leq 10$)
- Line $i + 3$: the i^{th} row of the distance matrix $c(i = 0, \dots, n)$ ($1 \leq c[i, j] \leq 30$)

Output

Minimal total travel distance

Example

input	Copy
4 2 15 7 7 11 2 0 12 12 11 14 14 0 11 14 14 14 10 0 11 12 10 14 12 0 13 10 13 14 11 0	
output	Copy
70	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:	GNU G++17 7.3.0
Choose file:	<input type="file"/> Choose File No file chosen
<input type="button" value="Submit"/>	

→ Last submissions

Submission	Time	Verdict
97132144	Oct/30/2020 04:08	Perfect result: 100 points
97132096	Oct/30/2020 04:06	Wrong answer on test 1

→ Your points

	Points
A	100



B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:09^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



K. CNK

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho hai số nguyên dương n, k và một số nguyên tố m sao cho $k < n, m$. Tính giá trị $C_n^k \text{ mod } m$.

Input

Dòng đầu tiên chứa số test T .

T dòng tiếp theo, mỗi dòng chứa ba số nguyên n, k, m .

Output

Gồm T dòng, mỗi dòng chứa một số nguyên duy nhất là kết quả phép toán $C_n^k \text{ mod } m$.

Example

input	<input type="button" value="Copy"/>
2 7 3 7 5 2 7	
output	<input type="button" value="Copy"/>
0 3	

Note

Số test $T \leq 10$

Subtask 1 (30%) : $n, k \leq 100$.

Subtask 2 (30%) : $n * k \leq 10^5$.

Subtask 3 (20%) : $m \leq 10^9 + 7, k \leq 10^5$

Subtask 4 (20%) : $m, n \leq 10^{18}, k \leq 10^5$

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
96534405	Oct/24/2020 16:53	Partial result: 5 points
95909650	Oct/18/2020 16:41	Partial result: 5 points
95909532	Oct/18/2020 16:40	Partial result: 5 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:26^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



M. DIGITS

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Write C program that reads an integer value N from stdin, prints to stdout the number Q ways to assign values 1, 2, ..., 9 to characters I, C, T, H, U, S, K (characters are assigned with different values) such that: $ICT - K62 + HUST = N$

Input

Unique line contains an integer N ($1 \leq N \leq 10^5$)

Output

Write the value Q

Example

input

2000

[Copy](#)

output

28

[Copy](#)

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: [GNU G++17 7.3.0](#)

Choose file: No file chosen

[Submit](#)

→ Last submissions

Submission	Time	Verdict
95809364	Oct/17/2020 19:08	Perfect result: 100 points

→ Your points

	Points
A	100
B	100
C	100



D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:27^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



ITMO UNIVERSITY

N. PERMUTATIONEN

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho 1 một hoán vị H độ dài n với các thành phần nằm trong tập $\{1, 2, \dots, n\}$. Tìm hoán vị kế tiếp của hoán vị H trong thứ tự từ điển.

Input

Dòng đầu ghi 1 số nguyên dương $n \leq 10^4$.

Dòng thứ 2 ghi n số nguyên dương $\leq n$ cách nhau bởi dấu cách là hoán vị H .

Output

Ghi ra hoán vị H trên một dòng duy nhất, các thành phần cách nhau bởi dấu cách. Nếu không tồn tại thì ghi ra -1.

Example

Input

5
3 2 1 5 4

[Copy](#)

Output

3 2 4 1 5

[Copy](#)

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: [GNU G++17 7.3.0](#)

Choose file: [Choose File](#) No file chosen

[Submit](#)

→ Last submissions

Submission	Time	Verdict
94550733	Oct/03/2020 11:02	Perfect result: 100 points
94549140	Oct/03/2020 10:45	Partial result: 90 points
94549046	Oct/03/2020 10:44	Partial result: 90 points
94549011	Oct/03/2020 10:43	Wrong answer on test 1
94548886	Oct/03/2020	Partial result: 90



	10:42	points
94548690	Oct/03/2020 10:40	Partial result: 90 points
94542814	Oct/03/2020 09:32	Partial result: 65 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:28^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



ITMO UNIVERSITY

O. PERMUTATIONLIST

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho 1 một số n . Đưa ra hoán vị độ dài n thứ k trong thứ tự từ điển.

Input

Dòng đầu ghi 2 số nguyên dương n, k ($n \leq 10^4, k \leq 10^9$) cách nhau bởi dấu cách.

Output

Ghi ra hoán vị thứ k trên một dòng duy nhất, các thành phần cách nhau bởi dấu cách. Nếu không tồn tại thì ghi ra -1.

Examples

input

1 2

[Copy](#)

output

-1

[Copy](#)

input

3 4

[Copy](#)

output

2 3 1

[Copy](#)

ĐH Bách Khoa Hà Nội
Private
Participant

→ **About Group**

Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201
Contest is running
10 days
Contestant

→ **Submit?**

Language: GNU G++17 7.3.0

Choose file: No file chosen

→ **Last submissions**

Submission	Time	Verdict
95360670	Oct/12/2020 19:11	Partial result: 80 points
95360534	Oct/12/2020 19:10	Partial result: 80 points
95358932	Oct/12/2020 18:50	Partial result: 4 points
94587714	Oct/03/2020 19:44	Partial result: 96 points
94587642	Oct/03/2020	Partial result: 96



	19:43	points
94587519	Oct/03/2020 19:41	Partial result: 96 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:53^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



P. COMBINATIONGEN

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho 1 môt chuỗi tổ hợp C độ dài m với các thành phần nằm trong tập $\{1, 2, \dots, n\}$. Tìm chuỗi tổ hợp kế tiếp của chuỗi C trong thứ tự từ điển.

Input

Dòng đầu 2 số nguyên dương $n, m \leq 10^4$.

Dòng thứ 2 ghi m số nguyên dương $\leq n$ cách nhau bởi dấu cách.

Output

Ghi ra chuỗi C trên một dòng duy nhất, các thành phần cách nhau bởi dấu cách. Nếu không tồn tại thì ghi ra -1.

Example

input Copy

5 3
2 3 5

output Copy

2 4 5

ĐH Bách Khoa Hà Nội
Private
Participant

→ **About Group**

Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201
Contest is running
10 days
Contestant

→ **Submit?**

Language:

Choose file: No file chosen

→ **Last submissions**

Submission	Time	Verdict
94625570	Oct/04/2020 11:03	Perfect result: 100 points
94625140	Oct/04/2020 10:57	Partial result: 25 points
94625023	Oct/04/2020 10:55	Partial result: 65 points

→ **Your points**



	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:54^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



Q. COMBINATIONLIST

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho 2 số nguyên dương n, m . Đưa ra chuỗi tổ hợp chập m của n phần tử trong tập $\{1, 2, \dots, n\}$ thứ k trong thứ tự từ điển.

Input

Dòng đầu ghi 3 số nguyên dương n, m, k cách nhau bởi dấu cách, $n, m \leq 10^4; k \leq 10^9$.

Output

Ghi ra chuỗi tổ hợp chập m của n phần tử thứ k trên một dòng duy nhất, các thành phần cách nhau bởi dấu cách. Nếu không tồn tại thì ghi ra -1.

Examples

input

1 1 1

output

1

input

4 3 6

output

-1

ĐH Bách Khoa Hà Nội

Private

Participant



About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



Submit?

Language:

Choose file: No file chosen

Last submissions

Submission	Time	Verdict
94626155	Oct/04/2020 11:11	Perfect result: 100 points

Your points

	Points
A	100
B	100
C	100



D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:48:55^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



ITMO UNIVERSITY

R. BINARYGEN

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho 1 một xâu nhị phân S độ dài n . Tìm xâu nhị phân kế tiếp của xâu S trong thứ tự từ điển.

Input

Dòng đầu 1 số nguyên dương $n \leq 10^4$.

Dòng thứ 2 ghi n số 0 hoặc 1 liên tiếp nhau.

Example

input	<input type="button" value="Copy"/>
5	
00100	
output	<input type="button" value="Copy"/>
00101	

Note

Ghi ra xâu nhị phân kế tiếp của xâu S trên một dòng duy nhất. Nếu không tồn tại thì ghi ra -1.

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
94633292	Oct/04/2020 12:47	Perfect result: 100 points

→ Your points

	Points
A	100
B	100
C	100



D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:17^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



ITMO UNIVERSITY

S. BINARYLIST

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho 1 số nguyên dương n . Đưa ra xâu nhị phân độ dài n thứ k trong thứ tự từ điển mà không có i số 0 liên tiếp.

Input

Dòng đầu ghi 3 số nguyên dương n, k, i trong đó $n, i \leq 10^4, k \leq 10^9$ cách nhau bởi dấu cách

Output

Ghi ra xâu nhị phân độ dài n thứ k mà không có i số 0 liên tiếp trên một dòng duy nhất, các thành phần cách nhau bởi dấu cách. Nếu không tồn tại thì ghi ra -1.

Examples

input

6 4 2

[Copy](#)

output

0 1 1 0 0

[Copy](#)

input

2 3 10

[Copy](#)

output

1 0

[Copy](#)

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: [GNU G++17 7.3.0](#) [▼](#)

Choose file: [Choose File](#) No file chosen

[Submit](#)

→ Last submissions

Submission	Time	Verdict
96522122	Oct/24/2020 14:37	Compilation error
96520319	Oct/24/2020 14:12	Partial result: 50 points
96520216	Oct/24/2020 14:11	Partial result: 50 points
95448472	Oct/13/2020 20:05	Partial result: 95 points
95448396	Oct/13/2020	Partial result: 90



	20:04	points
95448321	Oct/13/2020 20:03	Partial result: 85 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:18^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



T. HOLEY N QUEENS

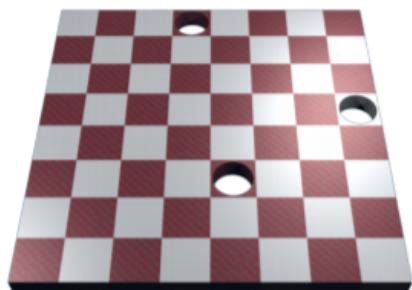
time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

The N-queens problem is the problem of placing N queens on a $N \times N$ chessboard so that no queen shares a row, column or a diagonal with any other queen. Essentially, we are trying to place the queens without any queen threatening another. For example, the first image below (without holes in the board) is a solution to the 8-queens problem.



For this problem, consider the problem we'll call the 'holey N-queens problem'. Instead of having an everyday chessboard (of arbitrary size), your chessboard is like the second image above (without queens): it has holes through some of the squares. You can't place a queen on a square that has a hole, but a queen can threaten another even if there is a hole on the path between them. Given a holey chessboard, you must find placements for the N queens so that no queen threatens another. The third image above (with holes and queens) shows one such solution.

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
96594153	Oct/24/2020 19:34	Partial result: 60 points
96593970	Oct/24/2020 19:29	Runtime error on test 1
96593848	Oct/24/2020 19:25	Partial result: 60 points
96593560	Oct/24/2020 19:19	Partial result: 0 points
96593515	Oct/24/2020	Partial result: 0

Input

Input consists of up to 1000 board descriptions. Each description starts with a line containing a pair of integers, $3 \leq N \leq 12$ and $0 \leq M \leq N^2$, indicating respectively the size of one side of the board, and the number of holes. The next M lines each describe the location of a unique hole in the board. A hole is described by its row and column, each in the range $[1, N]$. The end of input is marked by values of zero for N and M .

Output

For each problem description, print out the number of unique N -queens solutions that are possible. Two solutions are considered different if any space is occupied by a queen in one solution but not in the other.

Example

input	Copy
8 0 8 3 1 4 6 5 4 8 0 0	
output	Copy
92 50	

	19:18	points
96587382	Oct/24/2020 18:54	Partial result: 0 points
96584925	Oct/24/2020 18:44	Partial result: 0 points
96583872	Oct/24/2020 18:40	Partial result: 0 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:20^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



U. 05. NURSE

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

The director of a hospital want to schedule a working plan for a nurse in a given period of N consecutive days 1,..., N . Due to the policy of the hospital, each nurse cannot work all the days 1,..., N . Instead, there must be days off in which the nurse need to take a rest. A working plan is a sequence of disjoint working periods. A working period of a nurse is defined to be a sequence of consecutive days on which the nurse must work and the length of the working period is the number of consecutive days of that working period. The hospital imposes two constraints:

- Each nurse can take a rest only one day between two consecutive working periods. it means that if the nurse takes a rest today, then she has to work tomorrow (1)
- The length of each working period must be greater or equal to K_1 and less than or equal to K_2 (2)

The director of the hospital want to know how many possible working plans satisfying above constraint?

Input

The input consists of one line which contains 3 positive integers N, K_1, K_2 ($N \leq 1000, K_1 < K_2 \leq 400$)

Output

The output consists of only one single integer M modulo $10^9 + 7$ where M is the total working plans satisfying the above constraints.

Example

input	<input type="button" value="Copy"/>
6 2 3	
output	<input type="button" value="Copy"/>
4	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học Bách Khoa

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Last submissions

Submission	Time	Verdict
96007694	Oct/19/2020 20:01	Partial result: 80 points
96007563	Oct/19/2020 19:59	Partial result: 80 points
96007507	Oct/19/2020 19:58	Partial result: 80 points
96007371	Oct/19/2020 19:56	Partial result: 80 points
96007262	Oct/19/2020	Partial result: 60



	19:55	points
96006780	Oct/19/2020 19:48	Partial result: 60 points
96006745	Oct/19/2020 19:48	Wrong answer on test 1
96006304	Oct/19/2020 19:41	Partial result: 60 points
96006203	Oct/19/2020 19:40	Partial result: 60 points
96006014	Oct/19/2020 19:38	Partial result: 20 points

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:42^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



V. KPATH

time limit per test: 1 second
 memory limit per test: 256 megabytes
 input: standard input
 output: standard output

A k -path on a given undirected graph is a path having exactly k edges and containing no repeated nodes. Given an undirected graph G and an integral value k , count how many k -paths on G .

Input

The input consists of following lines

- Line 1: contains two integer n and k ($1 \leq n \leq 30, 1 \leq k \leq 10$) in which n is the number of nodes of the graph G (nodes are numbered 1,2,..., n)
- Line 2: contains an integer m ($1 \leq m \leq 60$) which is the number of edges of G
- Line $i + 2$: contains two integers u and v representing two end points of the i^{th} edge of G ($\forall i = 1, \dots, m$)

Output

The output contains the number of k -paths of G

Example

input	<input type="button" value="Copy"/>
4 3 5 1 2 1 3 1 4 2 3 3 4	
output	<input type="button" value="Copy"/>
6	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:

Choose file: No file chosen

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100



H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:43^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



W. ROUTING

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Superior Island is a very picturesque island and only bicycles are allowed on the island. Therefore, there are many one-way bicycle roads connecting the different best photo-shooting spots on the island. To help the visitors plan their trip to the island, the tourism commission wants to designate r different bicycle routes that go through some of the best photo-shooting spots on the island. Given a map of all the bicycle roads on the island and a list of the best photo-shooting spots to be included on each of the three planned routes (non-listed spots must not be included in the route), please write a program to plan each of the r routes so that the distance on each route is minimal. Note that each best photo-shooting spot may only appear at most once on the route.

Input

There are two parts to the input. The first part of input gives the information of the bicycle roads on the island. The first line contains two integer n and r , $n \leq 100$ and $r \leq 10$, indicating that there are n best photo-shooting spots on the island and there are r routes to be planned. The next n lines (line 2 through line $n + 1$) contains $n \times n$ integers (n lines with n integers on each line), where the j -th integer on line i denotes the distance from best photo-shooting spot $i - 1$ to best photo-shooting spot j ; the distances are all between 0 and 10, where 0 indicates that there is no one-way road going from best photo-shooting spot $i - 1$ to spot j .

The second part of input has r lines, denoting the r sightseeing routes to be planned. Each line lists the best photo-shooting stops to be included in that route. The integers on each line denote the recommended photo-shooting stops on that particular sightseeing route. The first integer on the line is the starting point of the route and the last integer is the last stop on the route. However, the stops in between can be visited in any order.

Output

Output r integers on r lines (one integer per line) indicating the distance of each of the r planned routes. If a route is not possible, output '0'.

Example

input	Copy
<pre>6 3 0 1 2 0 1 1 1 0 1 1 1 0 0 2 0 1 3 0 4 3 1 0 0 0 0 0 1 1 0 0 1 0 0 0 0 0 1 3 5 6 3 2 5 6 1 2 3 4 5</pre>	

output	Copy
<pre>5 0 7</pre>	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: GNU G++17 7.3.0

Choose file: No file chosen

→ Your points

	Points
A	100
B	100
C	100
D	100
E	100
F	100
G	100



H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:45^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#)

Supported by



X. CNK RM

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Cho các số nguyên dương k, n ($k < n$). Hãy tính giá trị C_n^k modulo $10^9 + 7$

Input

Một dòng chứa 2 số nguyên dương k và n ($1 \leq k < n \leq 1000$)

Output

Ghi ra giá trị C_n^k modulo $10^9 + 7$

Example

input Copy

3 5

output Copy

10

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học BKHN

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language: GNU G++17 7.3.0 ▼

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
96533939	Oct/24/2020 16:46	Partial result: 40 points
96533415	Oct/24/2020 16:38	Partial result: 20 points

→ Your points

	Points
A	100



B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:47^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by



Z. CONTAINER

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

There is a container having horizontal size W and vertical size H . There are N rectangle items $1, 2, \dots, N$ in which item i has horizontal size w_i and vertical size h_i . Find the way to place these N items into the container such that

- The sides of items are packed in parallel with the sides of the container
- The items cannot rotated
- No two items overlap.

Input

The input consists of following lines

- Line 1: contains two integer H and W ($1 \leq H, W \leq 30$)
- Line 2: contains N ($1 \leq N \leq 12$)
- Line $i + 2$ ($\forall i = 1, \dots, N$): contains two integers h_i and w_i

Output

The output contains a unique number 0 (if we cannot place items) or 1 (if we can place items)

Example

input	<input type="button" value="Copy"/>
6 4 3 2 3 6 1 4 3	
output	<input type="button" value="Copy"/>
1	

ĐH Bách Khoa Hà Nội

Private

Participant



→ About Group



Trang nộp bài trực tuyến dành cho sinh viên tham gia môn học "Thuật toán ứng dụng" của Viện CNTT-TT, Đại học Bách Khoa

[Group website](#)

Training 3 - EXHSEARCH - 20201

Contest is running

10 days

Contestant



→ Submit?

Language:	<input type="button" value="GNU G++17 7.3.0"/>
Choose file:	<input type="button" value="Choose File"/> No file chosen
<input type="button" value="Submit"/>	

→ Last submissions

Submission	Time	Verdict
96524803	Oct/24/2020 15:01	Perfect result: 100 points
96524041	Oct/24/2020 14:56	Partial result: 60 points

→ Your points

	Points
A	100



B	100
C	100
D	100
E	100
F	100
G	100
H	100
K	5
M	100
N	100
O	96
P	100
Q	100
R	100
S	95
T	60
U	80
V	
W	
X	40
Z	100
Total	1776

[Codeforces](#) (c) Copyright 2010-2020 Mike Mirzayanov

The only programming contests Web 2.0 platform

Server time: Oct/31/2020 18:49:49^{UTC+7} (h3).

Desktop version, switch to [mobile version](#).

[Privacy Policy](#).

Supported by

