

[← Practice Programming Problems](#) / Selection of Cities

## Selection of Cities

Submissions   Attempted by: 537 | Solved by: 182 | Partially Solved by: 95 | ★★★★★

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**1** **LIVE EVENTS** **Cloud Testing Chall...**

James has decided to take a break from his work. He makes a plan to visit India for a few days with his family. He knows a lot about India, and also about the various cities he could visit. He decides to write down all the cities on a paper. Let the number of cities be  $n$ . Now, he shows the list to his wife and asks her, the city/cities she wants to visit. He tells her that she can select any city/cities and any number of cities. The wife says, she needs a day to decide.

After this, James calls his son and tells him all about the trip, and the list of cities. He gives him a task and asks him, the number of ways the city/cities can be chosen from the list, if the total number of cities written on the list is  $n$ . The cities are numbered from 1 to  $n$ . At least 1 city has to be selected.

He now asks your help to find the answer for the question that was asked to him. The problem consists of a number of test cases.

### INPUT:

The first line of input contains the number of test cases  $t$ .  
Then  $t$  lines follow, each contains a number  $n$ , the number of cities.

### OUTPUT:

Output contains  $t$  lines; each line contains the answer for that test case. As the answer can be large, print the answer modulo  $10^9+7$

### CONSTRAINTS

$1 \leq t \leq 100000$

$1 \leq n \leq 10^{12}$

Author/Problem Setter: [Prateek Kumar](#)

Tester:

### Sample Input [\(Plaintext Link\)](#)

```
2
2
1
```

### Sample Output [\(Plaintext Link\)](#)

```
3
1
```

## Explanation

For test case 1: The only ways to select the cities is 1 2 1 2 Therefore the answer is 3.

For test case 2: The only way to select a city is 1 Therefore the answer is 1.

Time Limit: 1 sec(s) for each input file.

Memory Limit: 256 MB

Source Limit: 1024 KB

Marking Scheme: Marks are awarded if any testcase passes.

Allowed languages: C, CPP, CLOJURE, CSHARP, GO, HASKELL, JAVA, JAVASCRIPT, JAVASCRIPT\_NODE, LISP, OBJECTIVEC, PASCAL, PERL, PHP, PYTHON, RUBY, R, RUST, SCALA

Problem Author: [PRATEEK KUMAR](#)

Problem Tester: [Chandan Singh](#)

C

Upload file:  No file chosen

Save 

```
1 #include <stdio.h>
2
3 int main()
4 {
5     printf("Hello World!\n");
6     return 0;
7 }
8
```

1

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User	Result	Time	Lang
Jayanth ...		11.1198	Python
Jayanth ...		1.3397	C++
HARSH VA...		0.5397	C
HARSH VA...		0.5028	C
HARSH VA...		0.503	C
Deepak S...		1.5666	C++
Deepak S...		1.2508	Python

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[Number Theory - III](#)

written by Boris Sokolov

[Exact String Matching Algorithms](#)

written by Alei Reyes

[Binary Indexed Tree or Fenwick Tree](#)

written by Chandan Mittal

[Small tricks in for loop](#)

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