

[Home](#) » [Compete](#) » [December Challenge 2020 Division 2](#) » Vaccine Distribution

# Vaccine Distribution

Problem Code: **VACCINE2**

Submit

[Tweet](#)

Read problem statements in [Hindi](#), [Bengali](#), [Mandarin Chinese](#), [Russian](#), and [Vietnamese](#) as well.

Finally, a COVID vaccine is out on the market and the Chefland government has asked you to form a plan to distribute it to the public as soon as possible. There are a total of  $N$  people with ages  $a_1, a_2, \dots, a_N$ .

There is only one hospital where vaccination is done and it is only possible to vaccinate up to  $D$  people per day. Anyone whose age is  $\geq 80$  or  $\leq 9$  is considered to be *at risk*. On each day, you may not vaccinate both a person who is at risk and a person who is not at risk. Find the smallest number of days needed to vaccinate everyone.

## Input

- The first line of the input contains a single integer  $T$  denoting the number of test cases. The description of  $T$  test cases follows.
- The first line of each test case contains two space-separated integers  $N$  and  $D$ .
- The second line contains  $N$  space-separated integers  $a_1, a_2, \dots, a_N$ .

## Output

For each test case, print a single line containing one integer — the smallest required number of days.

## Constraints

- $1 \leq T \leq 10$
- $1 \leq N \leq 10^4$
- $1 \leq D \leq 10^5$
- $1 \leq a_i \leq 100$  for each valid  $i$

## Subtasks

**Subtask #1 (100 points):** original constraints

## Example Input

```
2
10 1
10 20 30 40 50 60 90 80 100 1
5 2
9 80 27 72 79
```

## Example Output

```
10
3
```

## Explanation

**Example case 1:** We do not need to worry about how the people are grouped, since only one person can be vaccinated in a single day. We require as many days as there are people.

**Example case 2:** There are two people at risk and three people who are not at risk. One optimal strategy is to vaccinate the two people at risk on day 1 and the remaining three on the next 2 days.

Author: [daanish\\_adm](#)

Date Added: 3-12-2020

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: CPP14, C, JAVA, PYTH 3.6, PYTH, CS2, ADA, PYPY, PYP3, TEXT, CPP17, PAS fpc, RUBY, PHP, NODEJS, GO, TCL, HASK, PERL, SCALA, kotlin, BASH, JS, PAS gpc, BF, LISP sbcl, CLOJ, LUA, D, R, CAML, rust, ASM, FORT, FS, LISP clisp, SQL, swift, SCM guile, PERL6, CLPS, WSPC, ERL, ICK, NICE, PRLG, ICON, PIKE, COB, SCM chicken, SCM qobi, ST, NEM, SQLQ

Submit

[Comments](#) ►

CodeChef is a competitive programming community

[About CodeChef](#) | [Contact Us](#)The time now is: 09:01:58 PM  
Your IP: 157.48.205.243CodeChef uses SPOJ © by [Sphere Research Labs](#)In order to report copyright violations of any kind, send in an email to [copyright@codechef.com](mailto:copyright@codechef.com)

### CodeChef - A Platform for Aspiring Programmers

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 two smaller programming challenges at the middle and end 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**.

### Practice Section - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in the language of your choice. Our **programming contest** judge accepts solutions in over 55+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

### Compete - Monthly Programming Contests, Cook-off and Lunchtime

Here is where you can show off your **computer programming skills**. Take part in our 10 days long monthly coding contest and the shorter format Cook-off and Lunchtime **coding contests**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), \$700 (for Global Community) and lots more CodeChef goodies up for grabs.

### Programming Tools

[Online IDE](#)[Upcoming Coding Contests](#)[Contest Hosting](#)[Problem Setting](#)[CodeChef Tutorials](#)[CodeChef Wiki](#)

### Practice Problems

[Easy](#)[Medium](#)[Hard](#)[Challenge](#)[Peer](#)[School](#)[FAQ's](#)

### Initiatives

[Go for Gold](#)[CodeChef for Schools](#)[College Chapters](#)[CodeChef for Business](#)

### Policy

[Terms of Service](#)[Privacy Policy](#)[Refund Policy](#)[Code of Conduct](#)[Bug Bounty Program](#)