(Adv.) Competitive Programming

Submit until 24.05.2019 13:30, via the judge interface

Problem: schedule (1 second timelimit)

You are an HPI student and quite busy with all the university work. To have as much time as possible for solving CompProg problems, you want to write a program to optimize your schedule for you. Each week you want to give it the amount of disposable time you have[1] and a list of university work to get done. Since you are good at planning, you already know how long each piece of work will take. The program should then check all possible schedules, with the assumption that you can switch tasks instantly, and pick one for you.

When you are finally done coding, the program takes ages to run. To monitor its progress, you want to add a progress bar, but apparently the number of schedules is too large to fit on screen. As a fix, you decide to display it modulo your favorite prime number: $10^9 + 7$.

Input The input begins with a line containing w ($1 \leq w \leq 600$), the number of weeks to process. Each week consists of two lines: The first contains t ($1 \leq t \leq 604\,800$), the amount of disposable time you have, and n ($1 \leq n \leq 100$), the number of tasks to get done during that week. The second contains the numbers d_1 to d_n, the amount of time you need for each task ($1 \leq d_i, \sum_{i=1}^{n} d_i \leq t$).

Output For each week, output a line containing the number of different possible ways to schedule that week, modulo $10^9 + 7$.

Sample input

```
3
3 1
2
4 2
2 2
1000 3
100 200 500
```

Sample output

```
3
6
439277386
```

[1] In seconds, because time is money, right?