

Protein

SEASON 8 – SECOND ROUND



Ivan started training in the gym quite intensively. However, after some time he decided that besides training it would be a good idea to consume additional proteins. He decided that each day he is going to mix in a packet of protein powder with a glass of water and drink that. There are different sizes of packets. All of them have a weight in grams that is divisible by 10 but Ivan doesn't want to eat/drink more than 100 grams a day.

There is some selection of different packets (all possible packets might be on sale – 10, 20, 30, ..., 100 or only some of them) in the store from which Ivan buys them. Also, even though they restock most sizes they sell, it turns out that of them has a limited number in stock, because it isn't being produced anymore. The only ones left are in the store and are no more than 10.

Ivan has decided that he wants to consume a total of K grams of protein over the course of an unlimited number of days, but each day he will mix in and drink exactly one packet until he reaches exactly K grams. He wonders in how many ways this can be done. Keep in mind, however, that since Ivan needs to consider his fitness regiment when deciding what packets to consume when, so the order in which he consumes them is also of importance (and not just which packets he will consume).

Ivan would write a program to count the number of ways, but he isn't sure how, since he plans to eat quite a lot of protein. That's why he asks you to help him by writing a program that does this.

Input

From the first line of the file `protein.in` a single number K is inputted – the total amount of grams Ivan wants to consume. From the second line another number N is inputted – the number of types of packets in the store. From the third line N numbers are inputted – the weights of the available packets. From the last line two numbers are inputted – the weight of the packet with a limited number and M – the number of such packets left (M could be 0, if there aren't any such packets left).

Output

In the output file `protein.out` print a single integer – the number of ways for Ivan to consume K grams of protein modulo $10^9 + 7$.

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Constraints

$0 < K \leq 10^{10}$ Also, K is divisible by 10.

$2 \leq N \leq 10$

$0 \leq M \leq 10$

Time limit: 3 sec

Memory limit: 256 MB

Sample test

Input (protein.in)	Output (protein.out)
60 3 10 20 40 10 2	12

Explanation of the sample test

Ivan has access to however many he wants packets of 20 and 40 grams, but only to two packets of 10 grams. The ways to consume exactly 60 grams are 12 and are shown below:

20 40

40 20

20 20 20

10 10 40

10 40 10

40 10 10

10 10 20 20

10 20 10 20

10 20 20 10

20 10 10 20

20 10 20 10

20 20 10 10