

# Easy Jump

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          1 second  
Memory limit:       512 megabytes

Waiting for the silk song, Grammy decides to challenge the Path of Pain in White Palace. After 4 to 5 hours of painful efforts, she achieves it. And she suddenly wonders about the expected time for her to pass it because she would feel lucky if the time she used is less than the expected time. The whole process could be modeled as below.



There are  $n$  stages in the Path of Pain. For stage  $i$ , Grammy can spend 1 unit of time to try it and the probability of passing it is  $p_i$ . If she passes it, she will go to stage  $i + 1$  immediately (or just finish the challenge if  $i = n$ ). Otherwise, she will take 1 unit of damage and back to stage  $i$ . For understanding convenience, we use hp and mp to represent mask and soul. If Grammy takes 1 unit of damage, her hp will decrease by 1. When the hp becomes 0, she will die and have to start over. Since Grammy is a lazy girl, she will never let her hp become 0 even if she is at stage 1. At any time, Grammy can do one of the following things.

1. Challenge the stage, costing 1 unit of time, with probability  $p_i$  passing it,  $1 - p_i$  failing and taking 1 unit of damage.
2. Focus, using 1 unit mp to heal 1 unit hp, costing  $T1$  unit time.
3. Heal by hiveblood, costing  $T2$  unit time to heal 1 unit hp. But hiveblood can work only every time after taking 1 unit of damage.

There are soul totems in some of the stages. For simplification, we assume that Grammy can fill up her soul whenever she is at a stage having a soul totem without costing any time. And she can fill up any number of times in a stage.

Given the hp upper bound  $H$ , mp upper bound  $S$ , assume that Grammy starts the challenge with full hp and mp, could you tell her the expected time she has to use to achieve the challenge? Note that since Grammy is lazy, she will choose the best strategy when challenging to minimize the expected time.

## Input

The input contains only a single case.

The first line contains three positive integers  $n$ ,  $H$  and  $S$  ( $1 \leq n \leq 1\,000$ ,  $2 \leq H \leq 9$ ,  $0 \leq S \leq 6$ ), denoting the number of stages, the upper bound of hp and mp.

The second line contains  $n$  integers  $P_1, P_2, \dots, P_n$  ( $1 \leq P_i \leq 99$ ), denoting the moleculars of probabilities. For each stage, we define  $p_i = \frac{P_i}{100}$ .

The third line first comes an integer  $K$ , denoting there are  $K$  stages that have soul totems. Follows  $K$  distinct integers  $a_1, a_2, \dots, a_K$  ( $1 \leq K \leq n, 1 \leq a_i \leq n$ ), denoting the index of the stages which have soul totems.

The fourth line contains two integers  $T1$  and  $T2$  ( $1 \leq T1, T2 \leq 100$ ), denoting the cost of focus and healing by hiveblood.

## Output

Output the minimum expected time. Your answer will be considered correct if its absolute or relative error does not exceed  $10^{-6}$ .

## Examples

standard input	standard output
1 2 0 50 0 1 2	4.000000000000
2 3 1 50 50 1 1 1 3	6.000000000000