GATO

After a lot of effort, Thanh had a rectangular piece of cake. Thanh planned to cut the cake in two pieces. For aesthetic reasons, Thanh wants the cutting surface to be as smooth and harmonious as possible.

For simplicity, we consider the pie as a cubic grid of length P, width Q and height R. Point (x, y, z) at row x, column y in layer z, has a non-negative dissonance value v(x, y, z). A valid cut meets the following two conditions:

- There is one and only one intersection with each vertical axis (total $P \times Q$). That is, the tangent is a function f (x, y); for all (x, y) ($x \in [1, P]$, $y \in [1, Q]$), we need to specify an intersection point f (x, y) ($1 \le f(x, y) \le R$).
- The cutting surface needs to meet certain smoothness requirements, meaning that cutting points on adjacent longitudinal axes cannot be too far apart. That is, for all $1 \le x, x' \le P$ and $1 \le y, y' \le Q$, if $|x - x'| + |y - y'| = 1$, then $|f(x, y) - f(x', y')| \le D$, where D is a given non-negative integer.

There can be many cutting functions f that satisfy the above conditions, and Thanh wants to find one with the smallest total dissonance value.

INPUT

The first line records 3 positive integers P, Q, R which are the length, width and height of the cake respectively (1 <= P, Q, R ≤ 40).

The second line records the smoothness D, followed by R*P*Q lines describing R matrices of size P x Q; located at column x, row y of matrix z is v(x, y, z) ($1 \le x \le P$, $1 \le y \le Q$, $1 \le z \le R$, $0 \le v(x, y, z) \le 1000$).

OUTPUT

Print out a single integer representing the minimum total dissonance value possible.

Sample Input	Sample Output
2 2 2 1 6 1 6 1 2 6 2 6	6

EXPLANATION

One optimal cut is f(1,1) = f (2,1) = 2, f(1,2) = f(2,2) = 1.