Soft Play

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C++ — 1 SEC — 512 MB

Children love to play, and bored children means trouble - a lot of trouble. That's why the mayor of Silhouettown has decided to build a new playground in Central Park.

Originally, the playground was to be constructed from blocks of concrete, but new health and safety measures require it to be made from soft foam blocks instead. The playground is an **n** x **n** grid, with each cell containing a tower of unit foam blocks. The foam blocks are very soft and have a compression coefficient **f**. A tower of blocks of height **h** and compression coefficient **f** compresses when stood on to height **h** * (1 - **f**).

Unfortunately, a further round of health and safety rules have been brought in. To prevent falling injuries, the difference in the height of 2 adjacent towers can be no greater than **k**. Since standing on a tower compresses it, the difference in height between towers **h1** (the one being stood on) and **h2** (an adjacent tower) is **h1** * (1 - **f**) - **h2**.

In Central Park, the playground has already been assembled, but it may not be compliant with the new rules. You need to find the number of blocks that should be added to the playground to make it compliant. The mayor wishes to spend as little money as possible, so this number needs to be minimised.

INPUT You will be given integers **n**, **k** and decimal **f**, denoting the width of the playground, the maximum height difference between adjacent towers, and the compression coefficient of the blocks, respectively. The next **n** lines contain **n** integers (between 1 and 100,000), representing the heights of each of the foam towers in the playground.

$4 \leq \mathbf{n} \leq 400$
$1 \leq \mathbf{k} \leq 100{,}000$
$0.0 \leq \mathbf{f} \leq 1.0$

OUTPUT Output a single integer, the minimum number of blocks that have to be added to make the playground compliant. You will not have to output a number greater than 2^{60}.

SAMPLES For example, suppose the playground is has a width of 4, the maximum height difference is 1, and the compression coefficient is 0.2. The initial playground is shown below on the left. The minimum number of blocks that need to be added is 11. The playground after this addition is shown below on the right. Towers that have been increased are highlighted in red.

2 3 5 2
1 3 6 3
3 2 3 1
6 4 2 2

2 3 5 3
3 4 6 4
4 3 4 3
6 4 3 2

INPUT

OUTPUT

4 1 0.2
2 3 5 2
1 3 6 3
3 2 3 1
6 4 2 2

15

4 1 0
4 2 3 1
1 3 4 2
2 4 1 3
3 1 2 4

11

4 3 0.5
8 3 5 7
2 9 8 3
1 5 3 6
4 8 2 5

0