

Ivancho's uncle is very old and rich. He decided that it is time to divide his fortune to his relatives. The uncle's fortune was one big field with size $N \times M$ meters. It was divided into squares one by one meter. In some of them Ivancho's uncle have hided pot filled up with gold. Nobody knows that except Ivancho. He even knows in which square there is gold.

Ivancho was given K square meters. Their exact position was not announced. Ivancho wants to choose such part of the field that he will receive the most pots full with gold.

You want to help him. You have to write the program **heritage** that decides what is the biggest number of gold pots Ivancho can get.

Due to some laws Ivancho can't divide his heritage in two or more pieces. He has to choose one rectangular or square field with area K . He can't place it over more that K little squares.(e.g. He can't get one half of two different squares.)

Input

In the first row of the input file `heritage.in` are given 3 integer numbers – N, M, K , followed of table $N \times M$ containing only '1' and '0'. With one is shown field with gold pot and with 0 empty field.

Output

On the single row of output file `heritage.out` you have to print one number – the maximal numbers of pots that Ivancho can get.

If it is not possible to find such rectangle that has area K and fits in uncle's field please output -1.

Constraints

$0 < N \leq 256$

$0 < M \leq 256$

$0 < K \leq M \times N$.

Example

Input (heritage.in)	Output (heritage.out)
4 4 12 0 1 0 1 0 1 1 1 1 0 0 1 0 1 1 1	9