

Problem C

MAXIMUM SUM

Time limit: 6 seconds

Given a matrix A of size $N \times M$, consisting of **uniformly randomly generated integers** within the range $[0, k - 1]$, where the rows are numbered from 1 to N , and the columns are numbered from 1 to M .

Let $S(r_1, c_1, r_2, c_2)$ represent the sum of elements within the subrectangle from row r_1 to row r_2 and from column c_1 to column c_2 .

$$S(r_1, c_1, r_2, c_2) = \sum_{r_1 \leq i \leq r_2} \sum_{c_1 \leq j \leq c_2} A[i][j]$$

Find the maximum value of $S(r_1, c_1, r_2, c_2)$ that is divisible by k .

Input

- The first line contains three integers N , M , and k ($1 \leq N \times M \leq 10^6, 1 \leq k \leq 10^6$).
- The next n lines each contain m integers in the range $[0, k - 1]$.

Output

- Output a single number, which is the largest sum found that is divisible by p . If no rectangle satisfies the condition, output 0.

Sample Input	Sample Output
6 7 5 1 2 0 0 3 3 1 3 0 3 1 0 1 2 1 1 0 2 0 3 2 2 4 1 4 4 0 3 0 2 3 0 2 2 1 0 0 3 0 1 0 4	65