

B. Board cover (round 1)

Input: standard input (from the keyboard)

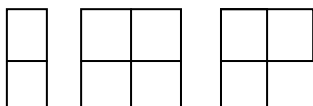
Output: standard output (to the screen)

Time limit: 20 seconds

Memory limit: 256 Mb

Problem

Rectangular board of size $N \times M$ is divided into unary cells. There is one integer written in each cell. Petrik has figures of three types: "domino", "square" and "corner" (drawn below).



Petrik puts figures on the board in such a way, that "domino" takes exactly two unary cells, "square" – four cells, and "corner" – three cells. He can arbitrarily rotate figures, but there cannot be more than one figure on each cell on the board.

Petrik wants to know, what is the largest possible sum of numbers written in cells, that are covered by figures, if he puts exactly K figures on the board. The sizes of the board allow to put K figures on it.

Input

The first line of the input contains three numbers: N – length of the board, M – width of the board, K – quantity of figures, that Petrik is planning to put on the board ($1 \leq N \leq 50$, $1 \leq M \leq 8$, $1 \leq K \leq 50$).

Next N lines contain M integers each: a_{ij} – number, written on the intersection of the i^{th} row and j^{th} column ($-100 \leq a_{ij} \leq 100$).

Output

The output should contain one number that is the largest possible sum of numbers written in cells covered by figures.

Example

Input	Output
5 3 1 -4 -2 -7 -11 -10 0 -5 2 3 -17 -1 -1 0 0 -2	5