G. Non-decimal sum

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given an array of integers written in base $radix$. Calculate their sum and output it written in the same base.

Input

The first line of the input contains an integer n ($1 \le n \le 10$) — the size of the array. The second line contains an integer $radix$ ($2 \le radix \le 36$) — the base of the numeral system used. Next n lines contain the elements of the array, one per line.

Each element is a non-negative integer written in $radix$-based notation, possibly with leading zeros, which contains between 1 and 5 digits, inclusive. The digits of the notation will be 0, 1, ..., 9, A, B, ..., Z in the given order.

Output

Output the sum of array elements in $radix$-based notation. Use the same format as in the input.

Examples

input
3 16 F0 20B 004
output
2FF

input
2 10 12 34
output
46