A. based sum

time limit per test
1 second
memory limit per test
256 megabytes
input
input.txt
output
output.txt

You will be given an integer NN representing the amount of numbers you will need to process. A string SS consisting of space-separated numbers of the following bases: binary, octal, decimal and, hexadecimal. An array AA consisting of the bases of each number in SS which will be represented in the input in the following decimal values [2, 8, 10, 16].

Your task is to perform the following arithmetic operations on the numbers in SS:

1. Increase each odd-indexed number by 10 in decimal format.
2. Decrease each even-indexed number by 10 in decimal format.

Finally, output the sum of the resulting numbers in decimal.

For example, given the following input:

- NN = 4
- SS = 100101 1EF 274 2024
- AA = 2 16 8 10

The decimal representation of the numbers will be the following:

- binary(100101) $\longrightarrow$ → decimal(37)
- hexadecimal(1EF) $\longrightarrow$ → decimal(495)
- octal(274) $\longrightarrow$ → decimal(188)
- decimal(2024) $\longrightarrow$ → decimal(2024)

To do the arithmetic operations we will need to add 10 to odd-indexed elements and subtract 10 from even-indexed elements:

- index(0) = 37 $\longrightarrow$ → 37 - 10 = 27
- index(1) = 495 $\longrightarrow$ → 495 + 10 = 505
- index(2) = 188 $\longrightarrow$ → 188 - 10 = 178
- index(3) = 2024 $\longrightarrow$ → 2024 + 10 = 2034

After that, we calculate the sum of the results and output it: 27 + 505 + 178 + 2034 = 2744

Furthermore, you have to verify that the input is correct, and if not you have to output "Invalid inputs".

You should expect testcases that do not conform to the input restriction explained below in the input format section, and you have to handle these testcases by verifying that the input is correct, and if not you have to output "Invalid inputs".

An example of invalid inputs:

- NN = 2
- SS = 2059 8163
- AA = 16 8

because the first digit in "8163" does not exist in the octal system (octal digits: [0, 1, 2, 3, 4, 5, 6, 7]).

Input

input.txt:

- First line: an integer NN (1 ≤ NN ≤ 40).
- Second line: a string SS consisting of NN space-separated positive numbers where each number consists of at most 6 digits from the following set of digits [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F].
- Third line: an array AA consisting of NN elements where ($A[i]$A[i] $\in$ ∈ [2, 8, 10, 16]; 0 ≤ ii < NN).

Output

The output should be written to output.txt and should contain the following:

- First line: an integer representing the decimal form of the sum of all numbers after performing the mentioned arithmetic operations or "Invalid inputs".

Examples

Input
Скопировать

```
2
2059 8163
16 8
```

Output
Скопировать

```
Invalid inputs
```

Input
Скопировать

```
4
100101 1EF 274 2024
2 16 8 10
```

Output
Скопировать

```
2744
```

Note

- Remember that array indexing starts from 0
- You need to print a newline character "\n" after your output. E.g: if the solution is "Invalid inputs" then you should print "Invalid inputs\n".
- You will be reading and writing from files, not standard input/output.
- binary digits: [0, 1]
- octal digits: [0, 1, 2, 3, 4, 5, 6, 7]
- decimal digits: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
- hexadecimal digits: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F]