# N. April Fools' Problem (medium)

time limit per test: 4 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

The marmots need to prepare $k$ problems for HC$^2$ over $n$ days. Each problem, once prepared, also has to be printed.

The preparation of a problem on day $i$ (at most one per day) costs $a_i$ CHF, and the printing of a problem on day $i$ (also at most one per day) costs $b_i$ CHF. Of course, a problem cannot be printed before it has been prepared (but doing both on the same day is fine).

What is the minimum cost of preparation and printing?

## Input
The first line of input contains two space-separated integers $n$ and $k$ ($1 \le k \le n \le 2200$). The second line contains $n$ space-separated integers $a_1, ..., a_n$ () — the preparation costs. The third line contains $n$ space-separated integers $b_1, ..., b_n$ () — the printing costs.

## Output
Output the minimum cost of preparation and printing $k$ problems — that is, the minimum possible sum $a_{i_1} + a_{i_2} + ... + a_{i_k} + b_{j_1} + b_{j_2} + ... + b_{j_k}$, where $1 \le i_1 < i_2 < ... < i_k \le n$, $1 \le j_1 < j_2 < ... < j_k \le n$ and $i_1 \le j_1, i_2 \le j_2, ..., i_k \le j_k$.

## Example

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input
```

```
8 4
3 8 7 9 9 4 6 8
2 5 9 4 3 8 9 1
```

```
output
```

```
32
```

## Note
In the sample testcase, one optimum solution is to prepare the first problem on day $1$ and print it on day $1$, prepare the second problem on day $2$ and print it on day $4$, prepare the third problem on day $3$ and print it on day $5$, and prepare the fourth problem on day $6$ and print it on day $8$.