## Footwork

| Input File | Output File | Time Limit | Memory Limit |
| :--- | :--- | :--- | :--- |
| standard input | standard output | 1 second | 256 MiB |

The corridor can be thought of as a grid of squares containing two rows and $N$ columns (numbered from 1 to $N$ from left to right). Each square contains an integer value, which can be negative:

- The $i$-th element (counting from 1) in the top row is $A_{i}$.
- The $i$-th element (counting from 1) in the bottom row is $B_{i}$.

You are a human with two feet. One foot starts on the square $A_{1}$ and the other foot starts on the square $B_{1}$. You must move your feet so that one foot ends on the square $A_{N}$ and the other foot ends on the square $B_{N}$.

You move your feet by making steps: In each step, you pick one foot and move it to another square to the right in the same row. After each step, your feet must be at most $K$ squares away from each other. More formally, if one foot is on square $A_{i}$, and the other foot is on square $B_{j}$, then $|i-j| \leq K$ must hold.

You may make multiple steps in a row with the same foot.
At the end, your score is the sum of values of all the squares you stepped on (including the starting and ending squares). What is the maximum score possible?

## Subtasks and Constraints

For all subtasks, you are guaranteed that:

- $1 \leq N \leq 100000$.
- $1 \leq K \leq 100000$.
- $-10000 \leq A_{i} \leq 10000$.
- $-10000 \leq B_{i} \leq 10000$.

Additional constraints for each subtask are given below.

| Subtask | Points | Additional constraints |
| :---: | :---: | :--- |
| 1 | 12 | $K \leq 5$ |
| 2 | 24 | $A_{i}=0$ or -1, for all i. $B_{i}=0$ or -1, for all i. |
| 3 | 6 | $N \leq 300$ |
| 4 | 20 | $N \leq 3000$ |
| 5 | 38 | No further constraints apply. |

## Input

- The first line of input contains the two integers, $N$ and $K$.
- The second line contains $N$ integers. The $i$-th integer (starting from 1) is $A_{i}$.
- The third line contains $N$ integers. The $i$-th integer (starting from 1 ) is $B_{i}$.


## Output

The output should contain a single integer: the maximum score possible.

## Sample Input 1

41
0228
$0-1052$

## Sample Output 1

19

## Sample Input 2

72
$0-10-62-1000$
$\begin{array}{lllllll}5 & 3 & -2 & -1 & -10 & -10 & 0\end{array}$

## Sample Output 2

## Explanation

In Sample Case 1, your score is $0+2+2+8+0+5+2=19$.
In Sample Case 2, your score is $0+2+0+0+5+3+-1+0=9$.


Figure 1: The steps are numbered in the order you shoud make them. The shaded squares are the ones you stepped on.

