NOI '10 P2 - Super Piano

Time limit: 1.0s **Memory limit:** 512M

National Olympiad in Informatics, China, 2010

Little Z is a minorly famous pianist. Recently, Doctor C has gifted him with a super piano. With it, little Z hopes to create the world's most enchanting music.

The super piano has n different keys in a row, numbered from 1 to n. The **value** of the i-th key is A_i, where A_i can be positive or negative.

A **chord** consists of a sequence of between L and R consecutive keys. Two chords are considered the same if they contain the same sequence of notes.

We define the **value** of a chord as the sum of the values of all its notes.

Little Z decides to compose a piece consisting of k different chords. Note that the chords are independent, so may overlap. Find the maximum sum of values of these chords.

Input Specification

The first line contains four positive integers n, k, L, and R. n represents the number of keys on the super piano. k represents the number of different chords that the piece should consist of. L and R respectively represent the minimum and maximum number of keys that can be in a single chord.

The next n lines each contain one integer, with the i-th line containing A_i.

Output Specification

The output consists of a single integer, the maximum possible value of a piece that little Z can compose.

Sample Input

```
4 3 2 3
3
2
-6
8
```

Sample Output

```
11
```

Explanation

There are 5 possible super chords:

1. Notes 1 to 2, for a total value of $3 + 2 = 5$
2. Notes 2 to 3, for a total value of $2 + (-6) = -4$
3. Notes 3 to 4, for a total value of $(-6) + 8 = 2$
4. Notes 1 to 3, for a total value of $3 + 2 + (-6) = -1$
5. Notes 2 to 4, for a total value of $2 + (-6) + 8 = 4$

The maximum value chords are 1, 3, and 5, for a total of $5 + 2 + 4 = 11$.

Constraints

There are 10 total test cases with bounds satisfying:

Test Case	N	k
1	≤ 10	≤ 100
2	$\leq 1\,000$	$\leq 500\,000$
3	$\leq 100\,000$	$= 1$
4	$\leq 10\,000$	$\leq 10\,000$
5	$\leq 500\,000$	$\leq 10\,000$
6	$\leq 80\,000$	$\leq 80\,000$
7	$\leq 100\,000$	$\leq 100\,000$
8	$\leq 100\,000$	$\leq 500\,000$
9	$\leq 500\,000$	$\leq 500\,000$
10	$\leq 500\,000$	$\leq 500\,000$

All of the test cases satisfy $-1000 \leq A_i \leq 1000$ and $1 \leq L \leq R \leq n$.
Furthermore, it is guaranteed that a composition fitting the requirements will exist.

Problem translated to English by **Alex**, editted by **rpeng**.