

TCCC '23 Nov P3 - Maximal Candy Operation

Time Limit: 1.0s **Memory Limit:** 256M

Every Halloween, **EthanPacker** loves to go trick or treating, an activity that consists of trick or treaters visiting different houses and obtaining C_i amount of candy from each house i . This year, he wants to **maximize** the amount of candy he can obtain before running out of energy. At first, he is dropped off at a single house j and can walk to adjacent houses $j + 1$ and $j - 1$ which are both exactly one distance away from each other. For every house **EthanPacker** passes by (including the one he is dropped off at), he can claim C_i amount of candy from the house i **exactly once** (he cannot visit the same house twice).



Average Trick or Treat candy

Throughout the night, **EthanPacker** can walk a total of K distance from the starting house before running out of energy. What is the maximum amount of candy **EthanPacker** can obtain before running out of energy?

Input Specification

The first line of input will contain two integers, N the number of houses in a row and K the amount of energy **EthanPacker** has. The next line will contain N integers, representing the amount of candy each house N_i will give out.

Python users are recommended to submit in PyPy3

Output Specification

Output the maximum amount of candy **EthanPacker** can obtain before he runs out of energy.

Subtasks

$$0 \leq C_i \leq 10^3$$

Batch 1 [10%]

$$0 \leq K < N \leq 10$$

Batch 2 [20%]

$$0 \leq K \leq 10 < N \leq 10^3$$

Batch 3 [20%]

$$0 \leq K < N \leq 10^3$$

Batch 4 [50%]

$$0 \leq K < N \leq 10^6$$

Sample Input 1

```
10 2
1 2 3 4 5 6 7 8 9 10
```

Sample Output 1

```
27
```

Explanation for Sample Output 1

The maximum amount of candy **EthanPacker** can obtain is 27.

This can be obtained by being dropped off at house 8, walking to house 9, and then to house 10 for a total distance of 2.

During this walk, he can collect 27 candy from the houses he passes by: 8 candies from house 8, 9 candies from house 9, and 10 candies from house 10.

Sample Input 2

```
10 4
8 0 2 14 8 3 5 0 9 5
```

Sample Output 2

```
32
```

Explanation for Sample Output 2

There are two ways to obtain this maximum value of 32.

If **EthanPacker** is dropped off at house 5 and walk 4 units to the left, or he can be dropped off at house 3 and walk 4 houses to the right.

$$8 + 14 + 2 + 0 + 8 = 32 \text{ or } 2 + 14 + 8 + 3 + 5 .$$