Walk

Ivancho wanted to make a walk in the rectangular mountain. It was made of N segments with width one meter and height H_i meters. He wanted to visit K consecutive segments but the climbing and swooping was too difficult for him. He knows that going up or down takes him one minute for each meter difference in the height. For example if he is in zone with height 20 meters and wants to go to zone with height 50 meters it will take him 30 minutes between the both zones. Going through the width of the zone takes Ivancho only a few seconds so he doesn't count it in the total time. He doesn't lose time for moving to the zone he starts from and after finishing because his friend Kircho is driving him with a car. You have to help Ivancho writing the program **walk** that finds the minimal time that will take him to walk exactly K zones.

Input

On the first row of the input file `walk.in` are given two numbers - *N, K.* – the length of the mountain and the number of zones Ivancho wants to visit.

On the next row are entered N numbers – the height of each zone.

Output

On the single row of the output file `walk.out` you have to print the minimal time for Ivancho's walk in minutes.

Constrains

$1 <= N <= 100\ 000$

$1 <= K <= N$

$1 <=$ height of each zone 2925 $<= N$

Example

Вход (walk.in)	Изход (walk.out)
9 5 10 15 3 14 7 12 13 12 1	14

Preview of the test:

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