

## Day 1 - Problem 2 - Laundry

At the Ohrid lake there are lots of nice hotels. All of them are facing a similar problem – laundry of sheets. It is both economical and ecological problem. The solution is to have only a few laundries in some hotels. The others will bring their sheets to the closest hotel that has a laundry. The hotel association wants you to solve the following problem. Consider that all the hotels are on a single street. Decide which hotels will be most appropriate to have laundries such that the transport cost will be minimal. The transport costs are calculated as a sum of the differences of the hotels position and their closest laundries.

Input

The first line has two integers:

- the number of the hotels  $1 \leq n \leq 200$
- the number of the laundries  $1 \leq k \leq 30$ .

The following  $n$  lines have the positions  $-50000 \leq p_i \leq 50000$  of the hotels in an ascending order.

Output

One integer – the minimal transport cost.

Example

Input	Output
6 3 5 6 12 19 20 27	8