

Maximum Gap Between Numbers

Problem description

You have a collection of numbers, for example 8, 3, 5, 15, 7. We say that there is a gap between two of those numbers if there is no other number between them. There is a gap between 3 and 5 of size 2, but there is no gap between 15 and 7 as there is the number 8 between them. The size of a gap is the absolute value of the two numbers.

Your task is to find the size of the biggest gap.

Input

A number n ($1 \leq n < 10^6$) followed by n numbers a_1, \dots, a_n (where $0 \leq a_i < 10^9$).

Output

The size of the biggest gap in a_1, \dots, a_n .

Sample input/output

Input	Output
8 34 23 2 9 17 89 17 99	55

In this example the biggest gap is between 34 and 89. Its size is $89 - 34 = 55$.