Problem K. Rabbits

Here N ($N \geq 3$) rabbits are playing by the river. They are playing on a number line, each occupying a different integer. In a single move, one of the outer rabbits jumps into a space between any other two. At no point may two rabbits occupy the same position.

Help them play as long as possible.

Input

The input has several test cases. The first line of input contains an integer t ($1 \leq t \leq 500$) indicating the number of test cases.

For each case the first line contains the integer N ($3 \leq N \leq 500$) described as above. The second line contains n integers $a_1 < a_2 < a_3 < \cdots < a_N$ which are the initial positions of the rabbits. For each rabbit, its initial position a_i satisfies $1 \leq a_i \leq 10000$.

Output

For each case, output the largest number of moves the rabbits can make.

Sample

5 3 3 4 6 3 2 3 5 3 3 5 9 4 1 2 3 4 4 1 2 4 5	1 1 3 0 1