ClassRoom

? Ask Doubt

Time-Limit: 4 sec Score: 1.00/100 Difficulty :

Memory: 256 MB Accepted Submissions: 100

Description

Vivek has built a new classroom with N seats. The seats are located along a straight line at positions x1,x2…..xN.
Vivek has to assign seats to K students such that a seat can be assigned to at most 1 student and the minimum distance between any two students is as large as possible. Find the largest minimum distance possible.

Input Format

The first line contains a single integer T (1 ≤ T ≤ 100000) - the number of test cases.

The first line of each test case contains 2 space-separated integers N, K (2 ≤ N ≤ 100000, 2 ≤ K ≤ N) - the number of seats and the number of students.

The second line of each test case contains N space-separated integers (0 ≤ xi ≤ 10^9) - the position of the seats. All the given positions are distinct.

Sum of N across all test cases ≤ 10^6.

Output Format

For each test case print the largest minimum distance possible in a new line.

Sample Input 1

Copy

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14
13 3
6048 2794 6123 1643 6907 6993 2382 6961 1094 488 7424 6469 6009
10 6
469 706 278 545 711 386 298 242 385 316
18 17
1042 271 839 45 1253 1060 428 676 418 1298 1230 668 665 158 916 659 458 202
11 10
16073873 456996657 980038523 123316193 427829862 54109396 319462445 181390046 543060523 490620628
938036110
6 2
274592090 858952753 241301573 721888021 806214246 383142174
12 5
5940 28062 23820 1965 3005 18306 23749 18322 17322 15504 14570 4481
17 13
1905 1798 5250 986 1239 3311 3519 5262 2444 151 5580 5008 1914 2366 5285 1528 331
4 3
792050646 886157889 58701906 576742651
9 6
3584 5153 5516 6249 2453 3992 6179 1646 4810
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C++14[GCC]

Submit

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