Competitive Programming SS24

Submit until end of contest

Problem: medals (1.0 second timelimit)

You are a team of the Empire's most legendary competitive programmers. You broke all records and solved every problem on all online judges (of course you solved even death-star). Forget about tourist, you are the legends of our time! During all your glorious contests, you received a ton of medals. You assigned each medal an integer, denoting its importance to you. For example, the gold medal you won at NWERC is nice but it is dwarfed by the first prize at the ICPC, where you stomped Russian teams! After them, beating the wookiees, jawas and others at the great imperial contest on Coruscant was easy.

Now you want to apply for the Grand Clever Problem Conglomerate (GCPC) which is directly overseen by the Emperor himself. There they supposedly thought of a problem nobody has solved before! And of course, you increase your chances, if you append a list of medals they officially recognize.

However, there is a catch. You may only append medals such that their importance (coinciding with your mapping) is non decreasing. Also, two adjacent attached medals have to be similar, i.e. their importance has to share a common factor greater than 1.

During your preparation of your application, you notice that you got all medals they officially recognize, but the certificates for the medals you want to attach are far too big for their submission form. Thus, you decide to only send the greatest number of medals that you can attach for your submission. You are legendary after all. They know who you are and can check your number.

Input The first line contains a single integer n ($1 \leq n \leq 2 \cdot 10^5$) - the number of medals. The second line contains n integers $a_1 \dots a_n$ ($1 \leq a_i \leq 10^6$) - the importances of the medals in ascending order.

Output Print a single integer - the number you send to the GCPC.

Sample input	Sample output
9 1 2 3 5 6 7 8 9 10	4
5 1 1 4 7 7	2
3 2 6 15	3