



Practice Arena

Practice problems aimed to improve your coding skills.

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- 📁 PRACTICE-03_TYPES
- 📁 LAB-PRAC-02_SCAN-PRINT
- 📁 LAB-PRAC-01
- 📁 PRACTICE-04_COND
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- 📁 LABEXAM-PRAC-01_MIDSEM
- 📁 PRACTICE-09_PTR-MAT
- 📁 LAB-PRAC-08_ARR-STR
- 📁 PRACTICE-10_MAT-FUN
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- 📁 PRACTICE-11_FUN-PTR
- 📁 LAB-PRAC-11_FUN-PTR
 - ❓ Name the Clones
 - ❓ The Race of the Clones
 - ❓ Partial Palindrome
 - ❓ Growth Curve
 - ❓ The Family Tree of Mr C
 - ❓ Timely Tasks
 - ❓ Plenty of Palindromes
 - ❓ Count and Say Sequence
 - ❓ Orbiting Indices
 - ❓ Zig-zag Numbers
 - ❓ Parent Palindrome
 - ❓ Leaderboard
- 📁 LAB-PRAC-12_FUN-STRUC
- 📁 LABEXAM-PRAC-02_ENDSEM
- 📁 LAB-PRAC-13_STRUC-NUM
- 📁 LAB-PRAC-14_SORT-MISC

The Race of the Clones

LAB-PRAC-11_FUN-PTR

The Race of the Clones [20 marks]

Problem Statement

Mr C and his clones are having a 400 metre race around the track. There are n clones in total and each of them completes the race in a different amount of time (all times are strictly positive integers). In the first line of the input, you will be given n and in the next line, you will be given the n times as strictly positive integers, separated by a space.

At time $t = 0$, all the clones start the race. However, if a clone finishes a race and finds that not all other clones have finished, that clone feels bad and starts racing again to give others company. Thus, the clones stop running only when all of them reach the finish line simultaneously.

In your output, first give the time it takes for the clones to stop running if only the first two of the n clones were participating in the race. In the next line, give the time it takes for the clones to stop running if all n of them are in the race.

Caution

1. The running times of the clones is not guaranteed to be in increasing or decreasing order. Two or more clones may have the same running time.
 2. The solution to this question does not necessarily involve recursion. However, you should try to write code in a modular manner, using functions, to make it easier to write and debug.
 3. Be careful about extra/missing lines and extra/missing spaces in your output.
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EXAMPLE:

INPUT

5

2 3 5 8 4

OUTPUT:

6

120

Explanation: If the first two clones were the only ones running, then since the first clone finishes in 2 seconds and the second in 3 seconds, they will reach the finish line together after 6 seconds have passed. However, if all the clones are running, then the first time they will all reach the finish line together is after 120 seconds.

Grading Scheme:

Total marks: [Points]

There will be partial grading in this question. There are two lines in your output. They are worth 25% and 75% of the weightage. Each visible test case is worth 2 points and each hidden test case is worth 4 points. There are 2 visible and 4 hidden test cases.

Please remember, however, that when you press Submit/Evaluate, you will get a green bar only if all parts of your answer are correct. Thus, if your answer is only partly correct, Prutor will say that you have not passed that test case completely, but when we do autograding afterwards, you will get partial marks.

 **Start Solving!** (</editor/practice/6216>)