MWC '15 #6 P2: Breadwinners

Time limit: 1.0s **Memory limit:** 256M

Flowright has registered in a bread eating contest, in which he will be competing against N $(1 \leq N \leq 500\,000)$ competitors for the grand prize of a toaster! To win, he must eat more slices of bread than all the other competitors at the tournament. Being a contrarian individual, **Flowright** wishes to lose against each competitor. **Flowright** has confidence in his abilities, but he also has a strange compulsion to eat a **prime** number of bread slices in each round.

Wanting to know his chances of losing, **Flowright** has determined C_i $(1 \leq C_i \leq 10^4)$, the number of slices that his competitors can eat per round. As **Flowright** is very hungry, help him determine the maximum number of slices he can eat in each round while still losing to his competitors.

Note: For 50% of points, $N \leq 10^5$ and $C_i \leq 10^3$.

Input Specification

On the first line, one integer N representing the number of competitors.

On the second line, N space separated integers C_i, representing the amount of bread that the i^{th} competitor can eat.

Output Specification

Output N lines, with the i^{th} line representing the largest number of bread slices **Flowright** can eat while still losing against the i^{th} competitor. If there is no way that **Flowright** can lose the round, output `no can do`.

Sample Input

```
3
5 7 1
```

Sample Output

```
3
5
no can do
```

Explanation of Sample Output

In the first two rounds, **Flowright** can eat 3 and 5 slices respectively. In the third round, there is no valid number of slices that **Flowright** can eat and still lose.