Integer division between a dividend n and a divisor d yields a quotient q and a remainder r. q is the integer which maximizes $q * d$ such that $q * d \leq n$ and $r = n - q * d$.

For any set of integers there is an integer d such that each of the given integers when divided by d leaves the same remainder.

$$
\begin{array}{r}
7262.11\ldots \\
17\overline{)123456.00} \\
-\underline{119} \\
44 \\
-\underline{34} \\
105 \\
-\underline{102} \\
36 \\
-\underline{34} \\
20 \\
-\underline{17} \\
30
\end{array}
$$

Input

Each line of input contains a sequence of nonzero integer numbers separated by a space. The last number on each line is 0 and this number does not belong to the sequence. There will be at least 2 and no more than 1000 numbers in a sequence; not all numbers occuring in a sequence are equal. The last line of input contains a single 0 and this line should not be processed.

Output

For each line of input, output the largest integer which when divided into each of the input integers leaves the same remainder.

Sample Input

```
701 1059 1417 2312 0
14 23 17 32 122 0
14 -22 17 -31 -124 0
0
```

Sample Output

```
179
3
3
```