Hash tables P83317_en

"Open Addressing" is a variant of hash tables, which (simplifiedly) consists of:
Being x any key, being MAX the size of the vector where the information is stored, being h1(x), the first position where will be tried to store x (a value between 0 and MAX-1), and being inc a value (which sometimes depends on x) between 1 and MAX-1. Then, the following position where would be tried to store x in the case that h1(x) was occupied would be h2(x) = (h1(x) + inc) mod MAX, and so forth to hMAX(x) = (hMAX-1(x) + inc) mod MAX. (Notice that with inc = 1 we obtain one of the variants of hash tables that we implemented in a laboratory practice.)
For instance, if MAX = 5, h1(x) = 1 and inc = 2, the positions of the vector would be visited (if it was needed) in the following order: 1, 3, 0, 2, 4. However, if MAX = 6, h1(x) = 1 and inc = 2, the order would be: 1, 3, 5, 1, 3, 5. As you can see, in the first case all the MAX positions are visited, but not in the second one.
Write a program that decides for each combination of MAX, h1(x) and inc given, if the combination is good (visites all the positions) or it is not.

Input

Input consists of zero or more cases. Each case consists of a line with MAX, h1(x) and inc. (We assure you that $2 \leq \text{MAX} \leq 50000$.) A line with three zeros indicates the end of the input.

Output

For each case, print in a line "good" or "bad" as required.

Sample input 1

```
5 1 2
6 1 2
0 0 0
```

Sample output 1

```
good
bad
```

Problem information

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