

408 Uniform Generator

Computer simulations often require random numbers. One way to generate pseudo-random numbers is via a function of the form

$$seed(x + 1) = [seed(x) + STEP] \% MOD$$

where “%” is the modulus operator.

Such a function will generate pseudo-random numbers (*seed*) between 0 and $MOD - 1$. One problem with functions of this form is that they will always generate the same pattern over and over. In order to minimize this effect, selecting the *STEP* and *MOD* values carefully can result in a uniform distribution of all values between (and including) 0 and $MOD - 1$.

For example, if $STEP = 3$ and $MOD = 5$, the function will generate the series of pseudo-random numbers 0, 3, 1, 4, 2 in a repeating cycle. In this example, all of the numbers between and including 0 and $MOD - 1$ will be generated every *MOD* iterations of the function. Note that by the nature of the function to generate the same $seed(x + 1)$ every time $seed(x)$ occurs means that if a function will generate all the numbers between 0 and $MOD - 1$, it will generate pseudo-random numbers uniformly with every *MOD* iterations. If $STEP = 15$ and $MOD = 20$, the function generates the series 0, 15, 10, 5 (or any other repeating series if the initial seed is other than 0). This is a poor selection of *STEP* and *MOD* because no initial seed will generate all of the numbers from 0 and $MOD - 1$.

Your program will determine if choices of *STEP* and *MOD* will generate a uniform distribution of pseudo-random numbers.

Input

Each line of input will contain a pair of integers for *STEP* and *MOD* in that order ($1 \leq STEP, MOD \leq 100000$).

Output

For each line of input, your program should print the *STEP* value right-justified in columns 1 through 10, the *MOD* value right-justified in columns 11 through 20 and either ‘Good Choice’ or ‘Bad Choice’ left-justified starting in column 25. The ‘Good Choice’ message should be printed when the selection of *STEP* and *MOD* will generate all the numbers between and including 0 and $MOD - 1$ when *MOD* numbers are generated. Otherwise, your program should print the message ‘Bad Choice’.

After each output test set, your program should print exactly one blank line.

Sample Input

```
3 5
15 20
63923 99999
```

Sample Output

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          3          5    Good Choice
          15         20    Bad Choice
        63923      99999    Good Choice
```