

## 4690 Rational Decimals

The decimal expansion of a non-negative rational number  $x$  will end in zeros (or in nines) to infinity if, and only if, the denominator of  $x$  is of the form  $2^n 5^m$ , where  $m$  and  $n$  are non-negative integers. Otherwise,  $x$  has a decimal expansion which eventually gets into a loop, endlessly repeating a sequence of one or more digits:

$$1/3 = 0.33333\dots$$

$$1/7 = 0.142857142857\dots$$

$$1318/185 = 7.1243243243\dots$$

You should write a program which reads non-negative rational numbers and outputs their decimal expansions.

### Input

Input to your program consists of lines with two positive integers (each  $< 2^{31}$ ), separated by white space.

Each line contains the numerator followed by the denominator of a non-negative rational number. The denominator will not be zero and the number of repeating digits will not exceed 100 digits.

### Output

For each input line there should be one output line with two numbers, separated by one blank, describing the decimal expansion of the rational number.

The first number must contain or end with a decimal point and must be the prefix of the expansion with all those digits (at least up to the decimal point) which are not repeated.

The second number must consist of one or more digits, must be the recurring part of the expansion, must be as short as possible, and must not be just a single nine.

### Sample Input

```
1 3
1000 7
1318 185
123 10
```

### Sample Output

```
0. 3
142. 857142
7.1 243
12.3 0
```