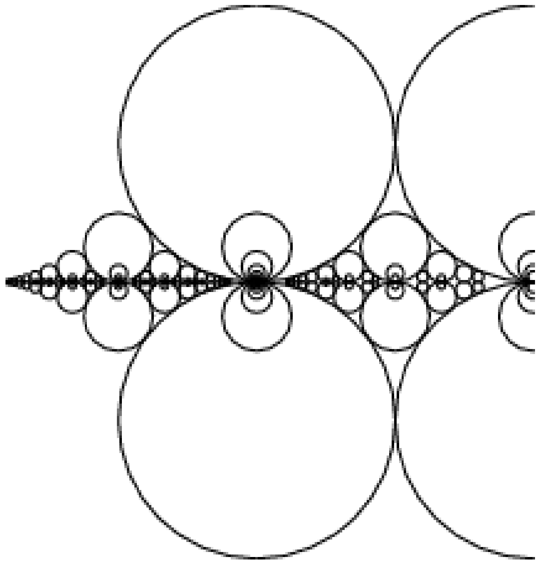
10408 Farey sequences

A fraction h/k is called a proper fraction if it lies between 0 and 1 and if h and k have no common factors. For any natural number $n \geq 1$, the Farey sequence of order n, F_n, is the sequence of all proper fractions with denominators which do not exceed n together with the "fraction" $1/1$, arranged in increasing order. So, for example, F_5 is the sequence:

$$\frac{1}{5}, \frac{1}{4}, \frac{1}{3}, \frac{2}{5}, \frac{1}{2}, \frac{3}{5}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{1}{1}.$$



It is not clear exactly who first thought of looking at such sequences. The first to have proved genuine mathematical results about them seems to be Haros, in 1802. Farey stated one of Haros' results without a proof in an article written in 1816, and when Cauchy subsequently saw the article he discoverd a proof of the result and ascribed the concept to Farey, thereby giving rise to the name *Farey sequence*. Hardy in his *A mathematician's apology* writes:

> *... Farey is immortal because he failed to understand a theorem which Haros had proved perfectly fourteen years before ...*

Surprisingly, certain simple looking claim about Farey sequences is equivalent to the Riemann hypothesis, the single most important unsolved problem in all of mathematics. Ford circles, see picture, provide a method of visualizing the Farey sequence.

But your task is much simpler than this.

For a given n, you are to find the k-th fraction in the sequence F_n.

Input

Input consists of a sequence of lines containing two natural numbers n and k, $1 \leq n \leq 1000$ and k sufficiently small such that there is the k-th term in F_n. (The length of F_n is approximately $0.3039635n^2$).

Output

For each line of input print one line giving the k-th element of F_n in the format as below.

Sample Input

```
5 5
5 1
5 9
5 10
117 348
288 10000
```

Sample Output

```
1/2
1/5
4/5
1/1
9/109
78/197
```