

Minimal Distance to Pi



Given two long integers, min and max , find and print a **common fraction**, $\frac{n}{d}$, such that $min \leq d \leq max$ and $|\frac{n}{d} - \pi|$ is minimal (recall that

$\pi \approx 3.1415926535\ 8979323846\ 2643383279\ 5028841971\ 693993751$). If there are several fractions having minimal distance to π , choose the one with the smallest denominator.

Input Format

Two space-separated long integers describing the respective values of min and max .

Constraints

- $1 \leq min \leq max \leq 10^{15}$

Output Format

Print your answer in the form **n/d**, where n is the numerator of the fraction closest to π and d is the denominator of that fraction.

Sample Input 0

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1 10
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Sample Output 0

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22/7
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Explanation 0

We must check all fractions with denominators from $min = 1$ to $max = 10$:

- For $d = 1$: $\frac{3}{1} \leq \pi \leq \frac{4}{1}$, the closest fraction is $\frac{3}{1}$ and the distance is $|\frac{3}{1} - \pi| \approx 0.142$.
- For $d = 2$: $\frac{6}{2} \leq \pi \leq \frac{7}{2}$, the closest fraction is $\frac{6}{2}$ and the distance is $|\frac{6}{2} - \pi| \approx 0.142$.
- For $d = 3$: $\frac{9}{3} \leq \pi \leq \frac{10}{3}$, the closest fraction is $\frac{9}{3}$ and the distance is $|\frac{9}{3} - \pi| \approx 0.142$.
- For $d = 4$: $\frac{12}{4} \leq \pi \leq \frac{13}{4}$, the closest fraction is $\frac{13}{4}$ and the distance is $|\frac{13}{4} - \pi| \approx 0.108$.
- For $d = 5$: $\frac{15}{5} \leq \pi \leq \frac{16}{5}$, the closest fraction is $\frac{16}{5}$ and the distance is $|\frac{16}{5} - \pi| \approx 0.058$.
- For $d = 6$: $\frac{18}{6} \leq \pi \leq \frac{19}{6}$, the closest fraction is $\frac{19}{6}$ and the distance is $|\frac{19}{6} - \pi| \approx 0.025$.
- For $d = 7$: $\frac{21}{7} \leq \pi \leq \frac{22}{7}$, the closest fraction is $\frac{22}{7}$ and the distance is $|\frac{22}{7} - \pi| \approx 0.001$.
- For $d = 8$: $\frac{25}{8} \leq \pi \leq \frac{26}{8}$, the closest fraction is $\frac{25}{8}$ and the distance is $|\frac{25}{8} - \pi| \approx 0.017$.
- For $d = 9$: $\frac{28}{9} \leq \pi \leq \frac{29}{9}$, the closest fraction is $\frac{28}{9}$ and the distance is $|\frac{28}{9} - \pi| \approx 0.030$.
- For $d = 10$: $\frac{31}{10} \leq \pi \leq \frac{32}{10}$, the closest fraction is $\frac{31}{10}$ and the distance is $|\frac{31}{10} - \pi| \approx 0.042$.

Of these, the closest approximation is $\frac{22}{7}$ with a distance to π of about **0.001**, so we print **22/7** as our

answer.