Prog 1

Monday, September 7, 2020 11:13 AM

i:0 i:1

① $\frac{0}{1} = i$ $\frac{1}{0} = i$

TOSS BUILDING AN ACTUAL TREE INSTRUCTIONS DOUT WANT THAT.

② $\frac{0+1}{1+0} = \frac{1}{1}$ $\frac{1+0}{2+1} = \frac{1}{3}$

$\frac{0+1}{1+1} = \frac{1}{2}$ $\frac{2}{1} = \frac{1+1}{0+1}$ $\frac{2+1}{1+0} = \frac{3}{1}$

$\frac{1}{3}$ $\frac{2}{3}$ $\frac{3}{2}$ $\frac{3}{1}$ $\frac{2+1}{1+1} = \frac{3}{2}$

$\frac{1+1}{2+1} = \frac{2}{3}$

$\frac{1}{4}$

0+1 0+2 1+2 0+3 1+3 4+2 1+4

0 1 2 3 4 5 6 7 8

$\frac{0}{1}$, $\frac{1}{0}$, ~~$\frac{1}{1}$~~, $\frac{1}{2}$, ~~$\frac{2}{1}$~~, $\frac{1}{3}$, ~~$\frac{2}{3}$~~, $\frac{3}{2}$, ~~$\frac{3}{1}$~~

left = 0, 1
right = 1, 0

points [(0,1), (1,0)]

newFrac = 1, 1

AT MOST 2 FRACTIONS

if target > new sum
go left on tree
(replace right.)

points [(0,1), (1,1)]

if target < new sum
go right on tree.
(replace right.)

points [(1,1), (1,0)]

REPEAT.

left = (0,1)
right = (1,1)

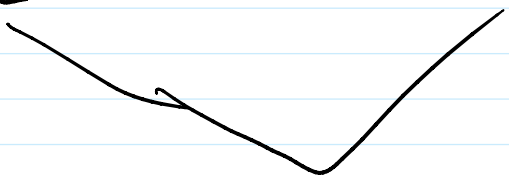
newFRAC = 1, 2

REPEAT

left = 0, 1
right = 1, 0

NEW FRAC = 2, 1

newFRAC = 1, 2 NEW FRAC = 2, 1



THIS PROCESS WILL CONTINUE UNTIL

NEW FRAC $\underset{den}{num}\left(\frac{a}{b}\right) \approx \sqrt{\frac{M}{N}}$

or if

$$|Na^2 - Mb^2| < b$$