if X+2 is not P then start with X+4

If X+4 is not p then start with X+2

If Start by X+4

If start by X+2



X = -1



After X steps reach 1 after 2 X reach 2X and so on

X = x/x - 1



1/X



So, each X start at point P = 1/X.

And this shift gives us one fraction at the end with specific characteristics = (x-1)/x

|  |  |  |  |
| --- | --- | --- | --- |
| X |  |  |  |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |

Then

And if

Then

Therefore X = X/2

At X is the multiplication of all natural numbers reciprocals

This can be rearranged as

111111111111111

121212121212121

101010101010101

123123123123123

100010100010100

1234567891011

1234567

import numpy as np

import pandas as pd

m = 1400000

n = 1500000

l = [2,3,5,7,11,13, 17 ,19 ,23,29 , 31 ,37 ,41 , 43 , 47 , 53

    , 59 , 61,67,71,73,79,83,89,97,101,103,107 ,109 , 113,127,131,137,139 ,211, 337]

x = pd.DataFrame(np.ones([n-m , len(l)]).astype(int), index = range(m,n) , columns=l)

for i in x.columns:

    x[i] = ((x[i].index % i))

x.to\_csv('mod.csv')

(x == 0 | isinstance((x.index / i), int) ).astype(int).to\_csv('fact.csv')

prime = x[(x == 0).astype(int).sum(axis=1)==0].index.to\_list()

pd.DataFrame(prime).to\_csv('primes.csv')

print("{0} Primes between {1} and {2} are this list {3}".format(len(prime),m,n,prime))