

```

import math

def is_prime(x):
    div = [elem for elem in range(2,int(math.sqrt(x))+1) if x%elem ==0 ]
    return len(div) == 0

primes = [elem for elem in range(5, 10002, 2) if is_prime(elem)]

_6k1 = [elem for elem in primes if (elem-1) % 6 == 0] # 6k+1's primes
_6k_1 = [elem for elem in primes if (elem+1) % 6 == 0] # 6k-1's primes

directions = [(1,0),(0,-1),(-1,0),(0,1)]

def gruenberger_path():

    def position(p):
        position.position = position.position[0] +
            directions[position.direction][0], position.position[1] +
            directions[position.direction][1]
        if p in _6k1: position.direction = (position.direction-1)%4 # turn left
        elif p in _6k_1: position.direction = (position.direction+1)%4 #turn right
        return position.position # normal odd number
    position.position = 0,0
    position.direction = 0

    return {i: position(i) for i in range(3, 10002, 2)}

def crossing():
    recurrences = dict()

    for key,value in gruenberger_path().items():
        recurrences[value] =
            recurrences[value]+[key] if value in recurrences else [key]

    return sorted([x for x in recurrences.values() if len(x)>1])

```