Limit = 10m

Totient(x) = Euler’s formula

(1)

--Calculating totient for every number b/w 1 and n

--Figure out relevant primes: b/w 1 and n/2

--Use Euler’s formula

--Could also combine these two…efficient, Er-style algorithm => nlog\*n…which is good.

(2)

--isPermutation -> hashcount, hashcount & compare : checking : log q to check q

--faster : take advantage of looping

--if 3|n, but not 9|n, then exists some p = 1 mod 6 : p|n [might be useful]

--…re-examine…looking for other

(3) n/phi(n) is a minimum

SEE ORDERED TRAVERSAL PLAN ON PAPER

\*\*\*\*\* RECAP

--Intuition regarding permutation -> mod 9 was correct: (a) n-ph(n) trick, and (b) there was a second trick there as well

--Always check the least likely, less expensive thing first; checking ratio, then Permutation was way faster

--Your insight re: ordered traversal w/ a queue was essentially correct, you just didn’t realize that if you know the primes, it’s \*not\* expensive to calculate phi, and & this \*is\* substantially cheaper than phi-sieving b/c when prime-sieving you only have to do sqrt(N) whereas w/ the phi-sieving you had to do N.