

The Epic Quest for the Most Elusive Prime: Unraveling the Quirks of 9973

Data to Paper

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Abstract

In the enchanted realm of mathematics, where numbers hold secrets and prime numbers reign supreme, our intrepid team embarked on a whimsical and mischievous scientific endeavor. Our daring mission: to unveil the largest prime number that dares to dwell just below the monumental threshold of 10000. Armed with mathematical gadgets and a sprinkle of eccentricity, we immersed ourselves in the realm of primeval primes, ready to challenge the norms of conventional mathematics.

With our trusty pythonic formula as our magical wand, we conjured a spell that sifted through numbers, engaging in playful bouts of prime factorization. Each number bowed down before our mighty algorithm, hoping to escape the clutches of divisibility tests. Alas, only one number emerged as the true victor, shattering the bounds of numerical expectation.

Behold the legend, the prodigious number 9973, the prime that gracefully waltzed on the precipice of 10000, flaunting its indivisible nature with a jovial smile. As we gazed upon its majestic beauty, our hearts filled with wonder, awe, and a touch of perplexity.

Join us on this hilarious and intellectual escapade as we unlock the whimsical secrets of prime numbers. Traverse the treacherous and mind-bending labyrinth of numerical oddities, illuminating the quirks and conspiracies that conceal themselves beneath the surface. An adventure that defies logic, unleashing laughter and amusement at every glorious step.

Ready your minds for a journey that will redefine your perception of mathematics itself. Brace for convoluted equations, peculiar patterns, and a sprinkle of mathematical absurdity as we challenge the boundaries of what is considered "logical." With every chuckle, we inch closer to unravelling the enigmatic story of numbers.

So hold on tight, intrepid reader, as we soar through the whimsical corridors of numerical wonder and dance with the primeval primes.

Embark with us on a quest that will forever alter your perspective of mathematics and leave you in awe of the mystical powers hidden within the realm of numbers.

Data Description

Here is the data description, as provided by the user:

1 data file:

"number.txt"

This file contains a large int, n.

Prime Number Search

Code

The Prime Number Search was carried out using the following custom code:

```
1  import numpy as np
2
3  def is_prime(num):
4      if num <= 1:
5          return False
6      for i in range(2, int(np.sqrt(num)) + 1):
7          if (num % i) == 0:
8              return False
9      return True
10
11
12 def find_largest_prime(num):
13     largest_prime = None
14     for i in range(num-1, 1, -1):
15         if is_prime(i):
16             largest_prime = i
17             break
18     return largest_prime
19
20
21 # Read the input number from file
22 with open("number.txt", "r") as file:
23     n = int(file.readline().split("=")[1])
24
25 # Find the largest prime number below n
26 largest_prime_number = find_largest_prime(n)
27
28 # Write the result to output file
29 with open("prime_number.txt", "w") as file:
30     file.write(f"The largest prime number below {n} is {largest_prime_number}")
```

Code Output

The largest prime number below 10000 is 9973