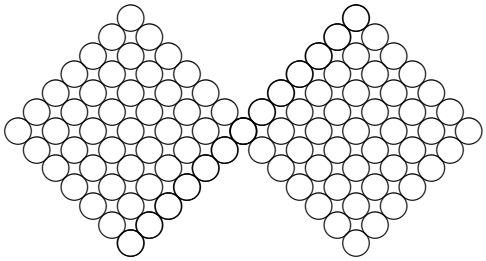
# 97 Ninety-Seven XCVII



Corresponding ordinal: ninety-seventh.

The number $97$ is the forty-ninth odd number.

The number $97$ is the twenty-fifth prime number. This is our final prime, but not the last prime in the universe. Euclid showed that there is always another prime. The number $2^{43112609} - 1$, a number that is $12,978,189$ digits long, is currently the largest known prime. It was shown to be prime in 2008.

The number $97$ has only two divisors: $1$ and $97$.

The number $97$ is the seventy-fourth deficient number.

As a sum of four or fewer squares: $97 = 4^2 + 9^2 = 5^2 + 6^2 + 6^2 = 1^2 + 4^2 + 4^2 + 8^2 = 2^2 + 2^2 + 5^2 + 8^2 = 3^2 + 4^2 + 6^2 + 6^2 = 4^2 + 4^2 + 4^2 + 7^2$.

As a sum of nine or fewer cubes: $97 = 6 \cdot 1^3 + 3^3 + 4^3 = 1^3 + 4 \cdot 2^3 + 4^3 = 2 \cdot 2^3 + 3 \cdot 3^3$.

As the difference of two squares: $97 = 49^2 - 48^2$.

The number $97$ appears in two Pythagorean triples: $[65, 72, 97]$ and $[97, 4704, 4705]$. They are both primitive, of course.

As a sum of three odd primes: $97 = 3 + 5 + 89 = 3 + 11 + 83 = 3 + 23 + 71 = 3 + 41 + 53 = 3 + 47 + 47 = 5 + 13 + 79 = 5 + 19 + 73 = 5 + 31 + 61 = 7 + 7 + 83 = 7 + 11 + 79 = 7 + 17 + 73 = 7 + 19 + 71 = 7 + 23 + 67 = 7 + 29 + 61 = 7 + 31 + 59 = 7 + 37 + 53 = 7 + 43 + 47 = 11 + 13 + 73 = 11 + 19 + 67 = 11 + 43 + 43 = 13 + 13 + 71 = 13 + 17 + 67 = 13 + 23 + 61 = 13 + 31 + 53 = 13 + 37 + 47 = 13 + 41 + 43 = 17 + 19 + 61 = 17 + 37 + 43 = 19 + 19 + 59 = 19 + 31 + 47 = 19 + 37 + 41 = 23 + 31 + 43 = 23 + 37 + 37 = 29 + 31 + 37$.

The numbers $97$, $907$, $9007$, $90007$, and $900007$ are primes.

There are $97$ primes composed of exactly three distinct digits.

The number $97$ is the largest prime that is less than the sum of the squares of its digits. (Prime Curios) In fact, $97$, $98$, and $99$ are all less than the sum of the squares of their digits, while every number greater than $99$ is greater than the sum of the squares of its digits.

There are exactly $97$ ways to form two fractions that add up to $1$ using the digits $0$ through $9$ exactly once. (Prime Curios) Two examples: $1/2 + 3485/6970$ and $24/63 + 507/819$.

The number $97$ is the smallest prime whose Roman numeral, XCVII, has prime alphabetical value: $24 + 3 + 22 + 9 + 9 = 67$. (Number Gossip) The next such prime is $107$. Primes of this form that are interesting years are $1453$, $1861$, and $2011$.

The "Wreck of the Old $97$" is a famous ballad about a train wreck near Danville, Virginia in 1903. Sample lyrics: "He was found in the wreck with his hand on the throttle; Scalded to death by the steam." and "Never speak harsh words to your true lovin' husband; He may leave you and never return."

In the only perfect game in World Series history, Don Larsen threw $97$ pitches.