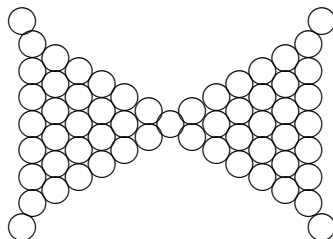


59 Fifty-Nine LIX



Corresponding ordinal: fifty-ninth.

The number 59 is the thirtieth odd number, the seventeenth prime number, and the forty-sixth deficient number.

The prime 59 appears in the seventh pair of twin primes 59, 61.

As a sum of four or fewer squares: $59 = 1^2 + 3^2 + 7^2 = 3^2 + 5^2 + 5^2 = 3^2 + 3^2 + 4^2 + 5^2$.

As a sum of nine or fewer cubes: $59 = 5 \cdot 1^3 + 2 \cdot 3^3 = 4 \cdot 2^3 + 3^3$.

As a difference of two squares: $59 = 30^2 - 29^2$.

The number 59 appears in only one Pythagorean triple [59, 1740, 1741]. It's primitive, of course.

As a sum of three odd primes: $59 = 3 + 3 + 53 = 3 + 13 + 43 = 3 + 19 + 37 = 5 + 7 + 47 = 5 + 11 + 43 = 5 + 13 + 41 = 5 + 17 + 37 = 5 + 23 + 31 = 7 + 11 + 41 = 7 + 23 + 29 = 11 + 11 + 37 = 11 + 17 + 31 = 11 + 19 + 29 = 13 + 17 + 29 = 13 + 23 + 23 = 17 + 19 + 23$. The last sum is particularly interesting in that the numbers 17, 19, and 23 constitute a *prime triple*, that is, three primes such that the difference between the smallest and the largest is equal to 6.

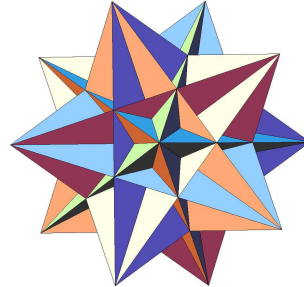
The number 59 is the smallest prime that is the sum of a composite number of consecutive composite numbers: $6 + 8 + 9 + 10 + 12 + 14$. As we have seen, it is also the sum of a prime number (three) of consecutive primes.

The number $59^4 + 158^4 = 133^4 + 134^4$ is the smallest number that can be written as a sum of two fourth powers in two different ways. The next such number is $7^4 + 239^4 = 157^4 + 227^4$.

The number 59 is the 17th prime. Each of 59 and 17 is the smaller prime in a pair of twin primes.

2 Chapter 59 Fifty-Nine LIX

In the book “The 59 Icosahedra” the authors, Coxeter, du Val, Flather, and Petrie, itemize the 59 stellations of the icosahedron. You can see them all at <http://www.mathconsult.ch/showroom/icosahedra/>. Here is one:



This image was generated by Vladimir Bulatov’s Polyhedra Stellations Applet, http://www.physics.orst.edu/~bulatov/polyhedra/stellation_applet.

Beethoven’s Razumovsky quartets constitute his opus 59.

The lowest 18-hole score in an official PGA tour was 59.