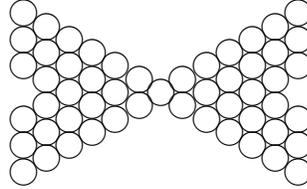


53 Fifty-Three LIII



Corresponding ordinal: fifty-third.

The number 53 is the twenty-seventh odd number, the sixteenth prime number, and the forty-second deficient number.

As a sum of four or fewer squares: $53 = 2^2 + 7^2 = 1^2 + 4^2 + 6^2 = 2^2 + 2^2 + 3^2 + 6^2$.

As a sum of nine or fewer cubes: $53 = 2 \cdot 1^3 + 3 \cdot 2^3 + 3^3$.

As a difference of two squares: $53 = 27^2 - 26^2$.

The number 53 appears in two Pythagorean triples: $[28, 45, 53]$ and $[53, 1404, 1405]$. Both are primitive, of course.

As a sum of three odd primes: $53 = 3 + 3 + 47 = 3 + 7 + 43 = 3 + 13 + 37 = 3 + 19 + 31 = 5 + 5 + 43 = 5 + 7 + 41 = 5 + 11 + 37 = 5 + 17 + 31 = 5 + 19 + 29 = 7 + 17 + 29 = 7 + 23 + 23 = 11 + 11 + 31 = 11 + 13 + 29 = 11 + 19 + 23 = 13 + 17 + 23 = 17 + 17 + 19$.

The number 53 is the number of primes that are less than 3^5 .

The number $53 = \frac{47+59}{2}$ is the average of the two primes that are just before it and just after it. As such it is called a *balanced prime*. The first three balanced primes are 5, 53, and 157.

The number 53 is the smallest prime whose five neighbors in each direction are composite:

48 49 50 51 52 **53** 54 55 56 57 58

The next two primes with this property are 89 and 157. (Number freak)

The sum of the first 53 primes is divisible by 53. The first three primes with that property are 23, 53, and 853. That is, the sum of the first 23 primes is divisible by 23, and so on.

The number 53 is prime, but adjoining any digit to it results in a composite: none of 530, 531, 532, 533, 534, 535, 536, 537, 538, 539 are prime. It is the smallest prime with

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this property. The next one is 89.

The the sum of the digits of the number $53^7 = 1174\,711\,139\,837$ is equal to 53.

At age 53, Abraham Lincoln issued the Emancipation Proclamation.