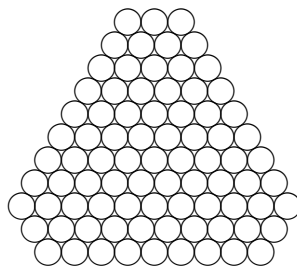


82 Eighty-Two LXXXII



Corresponding ordinal: eighty-second.

The number 82 is the forty-second even number and the fifty-ninth composite number.

As a product of primes: $82 = 2 \cdot 41$.

The number 82 has four divisors: 1, 2, 41, 82.

The number 82 is the sixty-third deficient number: $s(82) = 1 + 2 + 41 = 44 < 82$.

As a sum of four or fewer squares: $82 = 1^2 + 9^2 = 3^2 + 3^2 + 8^2 = 1^2 + 1^2 + 4^2 + 8^2 = 1^2 + 3^2 + 6^2 + 6^2 = 1^2 + 4^2 + 4^2 + 7^2 = 2^2 + 2^2 + 5^2 + 7^2 = 4^2 + 4^2 + 5^2 + 5^2$.

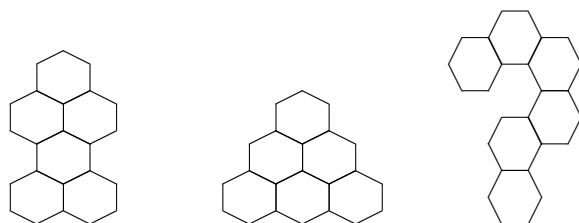
The number 82 is the smallest number that can be written as the sum of four or fewer squares in seven ways.

As a sum of nine or fewer cubes: $82 = 4 \cdot 1^3 + 3 \cdot 2^3 + 2 \cdot 3^3 = 2 \cdot 1^3 + 2 \cdot 2^3 + 4^3 = 1^3 + 3 \cdot 3^3$.

The number 82 appears in two Pythagorean triples: $[18, 80, 82]$ and $[82, 1680, 1682]$. Neither is primitive because 82 is twice an odd number.

As a sum of two odd primes: $82 = 3 + 79 = 11 + 71 = 23 + 59 = 29 + 53 = 41 + 41$.

There are 82 ways to arrange six hexagons joined at their edges to create a connected figure (planar polyhexes). Here are three examples:



The number $82 = 29 + 53$ is the sum of the $(8 + 2)$ th prime and the (8×2) th prime.

The number 82 is the sixth magic number of nuclear physics. These are the numbers of protons or neutrons that seem to be particularly favored for nuclear stability. The first five are 2, 8, 20, 28, and 50.

In Kurt Vonnegut's novel, *Hocus Pocus*, 82 is both the number of women the author has slept with and the number of people that he has killed.