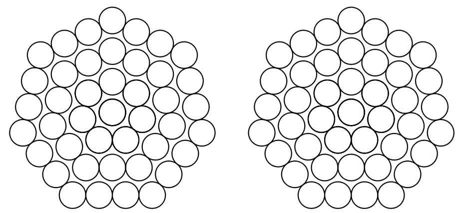
86 Eighty-Six LXXXVI



Corresponding ordinal: eighty-sixth.

The number 86 is the forty-fourth even number and the sixty-second composite number.

As a product of primes: $86 = 2 \cdot 43$.

The number 86 has four divisors: 1, 2, 43, 86.

The number 86 is the sixty-sixth deficient number: $s(86) = 1 + 2 + 43 = 46 < 86$.

As a sum of four or fewer squares: $86 = 9^2 + 2^2 + 1^2 = 7^2 + 6^2 + 1^2 = 6^2 + 5^2 + 5^2$.

As a sum of nine or fewer cubes: $86 = 6 \cdot 1^3 + 2 \cdot 2^3 + 4^3 = 5 \cdot 1^3 + 3 \cdot 3^3 = 4 \cdot 2^3 + 2 \cdot 3^3$.

The number 86 appears in only one Pythagorean triple: $[86, 1848, 1850]$. This triple could not be primitive because 86 is twice an odd number.

As a sum of two odd primes: $86 = 3 + 83 = 7 + 79 = 13 + 73 = 19 + 67 = 43 + 43$.

The number $2^{86} = 77\,371\,252\,455\,336\,267\,181\,195\,264$ contains no zeros. No one has found a number greater than 86 with this property.

The numbers $p^{86} \pm 2$ are composite for all primes p less than 86. You need only check $p^{86} - 2$ because $p^{86} + 2$ is divisible by 3 for every odd number p. What about p composite? The numbers $9^{86} - 2$ and $15^{86} - 2$ are composite. So are $21^{86} - 2$ and $25^{86} - 2$ and $27^{86} - 2$ and $33^{86} - 2$ and $35^{86} - 2$. What about $p > 86$? The numbers $89^{86} - 2$ and $97^{86} - 2$ are composite, as is $101^{86} - 2$. Do you ever get a prime?

In the year 1967, the phrase “eighty-six” entered the English language dictionaries. It means to refuse service (often at a bar). *Eighty-Sixed* is the title of a 1989 novel by David Feinberg, who had been a mathematics student at M.I.T.

In the popular TV series *Get Smart*, the main character was Agent 86.

From the 1994 movie *Quiz Show*: “How much do they pay instructors up at Columbia?”, “86 dollars a week.”

The number 86 is the numerical value of the Hebrew word *Elohim*, translated as “God” in Genesis 1:1.