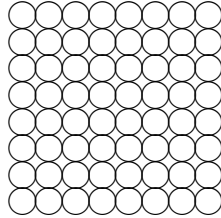


# 64 Sixty-Four LXIV



Corresponding ordinal: sixty-fourth.

The number 64 is the thirty-third even number and the forty-fifth composite number.

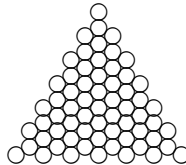
As a product of primes:  $64 = 2^6$ .

The number 64 has seven divisors: 1, 2, 4, 8, 16, 32, 64.

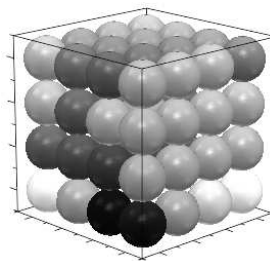
The number 64 is the fiftieth deficient number:  $s(64) = 1 + 2 + 4 + 8 + 16 + 32 = 63 < 64$ . It has to be deficient because it's a power of a prime.

The number 64 is the ninth square number:  $64 = 8^2$ .

The number 64 is the seventh centered triangular number in addition to being a square number.



The number  $64 = 4^3$  is also a cube. The first four cubes are  $0^3 = 0$ ,  $1^3 = 1$ ,  $2^3 = 8$ , and  $3^3 = 27$ .



As the sum of two triangular numbers,  $64 = 28 + 36$ . Every square number greater than 1 is the sum of two consecutive triangular numbers.

As a sum of four or fewer squares:  $64 = 8^2 = 4^2 + 4^2 + 4^2 + 4^2$ .

## 2 Chapter 64 Sixty-Four LXIV

As a sum of nine or fewer cubes:  $64 = 4^3 = 2 \cdot 1^3 + 2^3 + 2 \cdot 3^3 = 8 \cdot 2^3$ .

As a difference of two nonzero squares:  $64 = 10^2 - 6^2 = 17^2 - 15^2$ .

The number 64 appears in five Pythagorean triples: [48, 64, 80], [64, 120, 136], [64, 252, 260], [64, 510, 514], [64, 1023, 1025]. The last is primitive.

The number 64 is the difference of the first pair of amicable numbers, 220 and 284, and also of the tenth pair, 66, 928 and 66, 992. Two numbers are *amicable* if each is the sum of the proper divisors of the other.

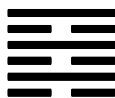
As a sum of two primes:  $64 = 3 + 61 = 5 + 59 = 11 + 53 = 17 + 47 = 23 + 41$ .

At age 64, Zachary Taylor was inaugurated as President of the United States.

At age 64, George Herbert Walker Bush was inaugurated as President of the United States.

There are 64 squares on a chess board.

There are I Ching 64 hexagrams. Hexagram number 64 is



There are 64 sexual positions in the Kama Sutra.