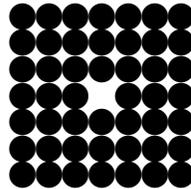


# 48 Forty-Eight XLVIII



Corresponding ordinal: forty-eighth.

The number 48 is the smallest number with exactly ten divisors, namely 1, 2, 3, 4, 6, 8, 12, 16, 24, 48.

The number 48 is the twenty-fifth even number and the thirty-second composite number.

As a product of primes:  $48 = 2^4 \cdot 3$ .

The number 48 is the ninth abundant number:  $s(48) = 1 + 2 + 3 + 4 + 6 + 8 + 12 + 16 + 24 = 76 > 48$ . Note that 48 is abundant because it is a proper multiple of the perfect number 6.

As a sum of four or fewer squares:  $48 = 4^2 + 4^2 + 4^2 = 2^2 + 2^2 + 2^2 + 6^2$ .

As a sum of nine or fewer cubes:  $48 = 5 \cdot 1^3 + 2 \cdot 2^3 + 3^3 = 6 \cdot 2^3$ .

As a difference of two squares:  $48 = 7^2 - 1^2 = 8^2 - 4^2 = 13^2 - 11^2$ .

The number 48 appears in ten Pythagorean triples:

[14, 48, 50] [20, 48, 52] [36, 48, 60] [48, 55, 73] [48, 64, 80]  
[48, 90, 102] [48, 140, 148] [48, 189, 195] [48, 286, 290] [48, 575, 577]

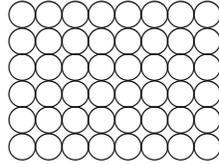
The fourth and the last are primitive.

As the sum of two odd primes:  $48 = 5 + 43 = 7 + 41 = 11 + 37 = 17 + 31 = 19 + 29$ .

It is the smallest number that can be expressed as the sum of two primes in five ways.

To Alaskans, the “lower 48” refers to the 48 contiguous states of the U. S.

From 1912 to 1959, there were 48 states in the U. S. During that time, the flag had 48 stars in a  $6 \times 8$  rectangular pattern:



At age 48, Franklin Pierce was inaugurated as President of the United States.

The forty-eighth state to enter the Union was Arizona.

The forty-eighth largest state in the United States is Connecticut.

Johann Sebastian Bach's *Well Tempered Clavier* consists of 48 pieces, a prelude and a fugue in each major and minor key.

Prince Siddhartha meditated for 48 days under a Bodhi tree, was enlightened on the forty-ninth day, and became Buddha.

"Torah is acquired through 48 things." Pirkei Avot 6:6.