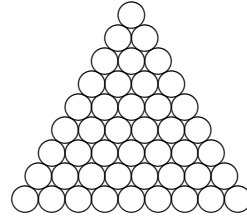


45 Forty-Five XLV



Corresponding ordinal: forty-fifth.

The number 45 is the twenty-third odd number and the thirtieth composite number.

As a product of primes: $45 = 3^2 \cdot 5$.

The number 45 has six divisors: 1, 3, 5, 9, 15, 45.

The number 45 is the thirty-fifth deficient number: $s(45) = 1 + 3 + 5 + 9 + 15 = 33 < 45$.

As a sum of four or fewer squares: $45 = 3^2 + 6^2 = 2^2 + 4^2 + 5^2 = 1^2 + 2^2 + 2^2 + 6^2 = 2^2 + 3^2 + 4^2 + 4^2$.

As a sum of nine or fewer cubes: $45 = 2 \cdot 1^3 + 2 \cdot 2^3 + 3^3$.

As a difference of two squares: $45 = 7^2 - 2^2 = 9^2 - 6^2 = 23^2 - 22^2$.

The number 45 appears in eight Pythagorean triples:

$$\begin{array}{cccc} [27, 36, 45] & [24, 45, 51] & [28, 45, 53] & [45, 60, 75] \\ [45, 108, 117] & [45, 200, 205] & [45, 336, 339] & [45, 1012, 1013] \end{array}$$

The third and the last are primitive.

As a sum of three odd primes:

$$\begin{array}{cccc} 3 + 5 + 37 & 3 + 11 + 31 & 3 + 13 + 29 & 3 + 19 + 23 \\ 5 + 11 + 29 & 5 + 17 + 23 & 7 + 7 + 31 & 7 + 19 + 19 \\ 11 + 11 + 23 & 11 + 17 + 17 & 13 + 13 + 19 & \end{array}$$

The number 45 is the ninth triangular number: $45 = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9$.

The sum of its digits is nine.

The number 45 is the only nonzero number that is equal to the sum of its digits times 5.
(Number Gossip)

Each acute angle of an isosceles right triangle is 45 degrees.

The forty-fifth state to enter the Union was Utah.

2 Chapter 45 Forty-Five XLV

The forty-fifth largest state in the United States is Massachusetts.

The Colt 45 is a popular pistol and a malt liquor.

The numerical value of the Hebrew word “Adam” is 45.

The number 45 is the number of a famous pamphlet of John Wilkes criticizing George III. For that reason it appears on a bowl made by Paul Revere for the Sons of Liberty.