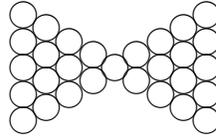# 29 Twenty-Nine XXIX

Corresponding ordinal: twenty-ninth.

The number 29 is the fifteenth odd number, the tenth prime number, and the twenty-third deficient number.

The prime 29 appears in the fifth twin-prime pair 29, 31.

As the sum of four or fewer squares, $29 = 2^2 + 5^2 = 2^2 + 3^2 + 4^2$. It is the smallest prime that is the sum of three consecutive squares.

As the sum of nine or fewer cubes: $29 = 1^3 + 1^3 + 3^3 = 5 \cdot 1^3 + 3 \cdot 2^3$.

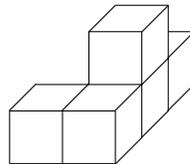As a difference of two squares: $29 = 15^2 - 14^2$.

The number 29 appears in two Pythagorean triples: $[20, 21, 29]$ and $[29, 420, 421]$, both primitive, of course.

As a sum of three odd primes: $29 = 3 + 3 + 23 = 3 + 7 + 19 = 3 + 13 + 13 = 5 + 5 + 19 = 5 + 7 + 17 = 5 + 11 + 13 = 7 + 11 + 11$.

The number $2^{29} = 536,870,912$ is the largest power of 2 all of whose digits are different.

The number $29_{29} = 67$ is a prime.

There are 29 pentacubes. These figures are formed by joining five cubes together at their faces. Here is one example:

The twenty-ninth President of the United States was Warren Gamaliel Harding.

The twenty-ninth state to enter the Union was Iowa.

The twenty-ninth largest state in the United States is North Carolina.

February has 29 days in leap years, an idea that goes back to Julius Caesar in 45 BC. The problem this (almost) solved is that the solar year is about $365\frac{1}{4}$ days long. More than a thousand years later, the calendar got enough out of whack again so that this scheme had to be fine tuned.

Twenty-nine is a card game popular in the northern part of India. It is usually played by four players in fixed partnerships using thirty-two cards from a standard 52-card deck. The cards ranked 2 through 6 are removed.

Euclid's Elements, Book I, Proposition 29: A straight line falling on parallel straight lines makes the alternate angles equal to one another, the exterior angle equal to the interior and opposite angle, and the sum of the interior angles on the same side equal to two right angles.

Prince William and Kate Middleton will wed on Friday, April 29, 2011 at Westminster Abbey in London.