MATHEMATICIAN WAITING FOR THE WEDDING CAKE AND THE CAVA AT THE RECEPTION

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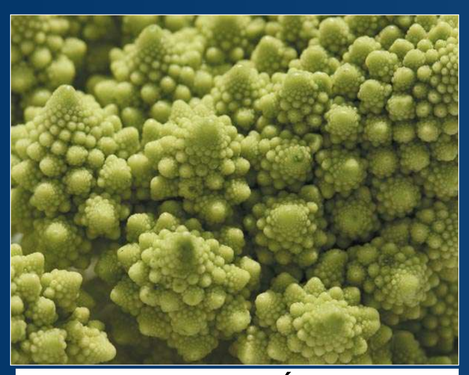
ABSTRACT

Imagine you are at a wedding reception. You have been sitting at the table for two bours and the cave, the cake and the coffee still must be brought. You know nobody except your partner. The interesting conversations and the good jokes have already been told, and you don't even remember the name of more than half of the people sitting at your table. Although the guests don't believe it, mathematics has been present during the meeting, and you, of course, are going to tell some stories about mathematics and what you have just eaten. Some of your comparations porbably will leave when you start, but those who stay may have an enjoyable time and may even learn something new. The volume of alcohol ingested by all of you might influence the development of the exposition. Drink in moderation and wait for the dancing and the free bar for to start being yourself

CROQUEMBOUCHE OF PROFITEROLES

Kepler´s Conjecture comes from the problem created in 1,590 by the adventurer, pirate and English writer Sir Walter Raleigh to his assistant, Thomas Harriot. Raleigh proposed to Harriot the problem to determine the maximum number of cannon balls that can be piled up of piramidal form in the deck of a boat. Harriot was able to calculate that number and in addition he managed to interest in this problem to the great german astronomer Johannes Kepler, with whom he kept up correspondence. In 1611 Kepler speculated that pyramidal piling up that for example it is used in the fruit shop to arrange its merchandise constitutes in addition the optimal method that allows grouping a greater number of spheres in the smallest possible space. Although the hypothesis of Kepler seems to obey to the strictest common sense, the effective demonstration has been confirmed recently.



CLOUD OF BRÓCOLI

Geometric object whose basic structure is repeated in different scales

It was proposed by Benoît Mandelbrot in 1975

They can be generated by a recurrent or reiterative process that produces auto-similar structures independently of the specific scale.

They are geometric structures that combine irregularity and structure

It has detail in great or arbitrarily small scales

He is too irregular to be described in traditional geometric terms

It has exact or statistical auto-similarity

Its dimension of Hausdorff-Besicovitch is greater than its topologic and even fractional dimension

It is defined recurrently

POTATO CYLINDER CREAKY

The cylinder is the geometric body that it is generated by a rectangle that it is turned around one of its sides. It is constituted by three sides: two circular identical faces join perpendicularly with a curved and closed plane.

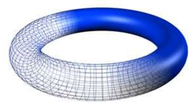
CONES OF SALMON WITH SPUN EGG

In elementary geometry a cone is a solid that it is formed by the revolution of a triangle rectangle (*right-angled triangle)* around one of its legs.

The term cone can be extended to denominate more general forms, for example the elliptical cone it is obtained when changing the base for an ellipse. In this case the elementary cone it is called straight circular cone.

TURBAN OF RICE WITH PRAWNS AND CLOUD OF BROCOLI

TORUS. Topologically, a torus is a closed surface defined like the product of two circumferences



SALAD OF LETTUCE, CARROT WITH POTATO HELIX AND THYME

CYLINDRICAL HELIX: Curve that cuts the generatrixes of a straight cylinder with a constant angle

The helix projection over a parallel plane to the axis of the cylinder is a sinusoidal curve.

SAT AT THE TABLE

Eight guests, who not yet have been introduced, are going to sit at in a circular table. One of them proposes the following game like presentation. Let us to consider the clockwise movement. Could we interchange our positions until we sit in alphabetical order without speaking or communicating?

Where would you sit? Would you wait to look the other movement?

Before they make no movement, we choose as origin to the first name and calculate the probability that the seven rest are placed alphabetically

HOJALDRE OF MOEBIUS WITH CREAM AND CHERRIES

Surface of a single face and a single edge, non-orientable discovered by A.F. Möbius and Johann Listing in 1858.

An analog of Möbius band is the Klein bottle, that is a closed object that has a single surface, it cannot be differentiated "outside" from "inside".

A tessellation consists of cover the plane completely connecting similar pieces without hollows or fissures. The configuration that in such case is obtained receives the name of mosaic or tessellation

At first he is n=número of existing names (soon we will make it tend to infinite)

Forms possible to choose 7 names: $VR(n,7)=n^7$

Let us count, of previous, those that are ordered alphabetically (would be equivalent to choose seven (with repetition) without it concerns the order, since they would have to be in that order, this is CR(n,7)

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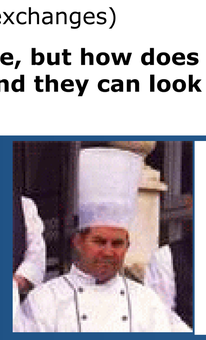
this is $P(A)=\frac{\binom{n+6}{7}}{n^7}=\frac{(n+6)(n+5)(n+4)(n+3)(n+2)(n+1)}{7!n^6}$

If the number of names tended to infinite, it limits would be $P(A)=\frac{1}{7!}=0.000198...$ (one between all the possible exchanges)

Practically impossible, but how does it affect the *psychology of the players* when they cannot communicate and they can look the movement of the other players?



ELABORATION MENU

ANTONIO GÁZQUEZ EXPÓSITO

Chef Restaurante Las Eras

Desierto de Tabernas (Almería)

Escudo de Oro SKAL International

Premio Andaluz de Gastronomía