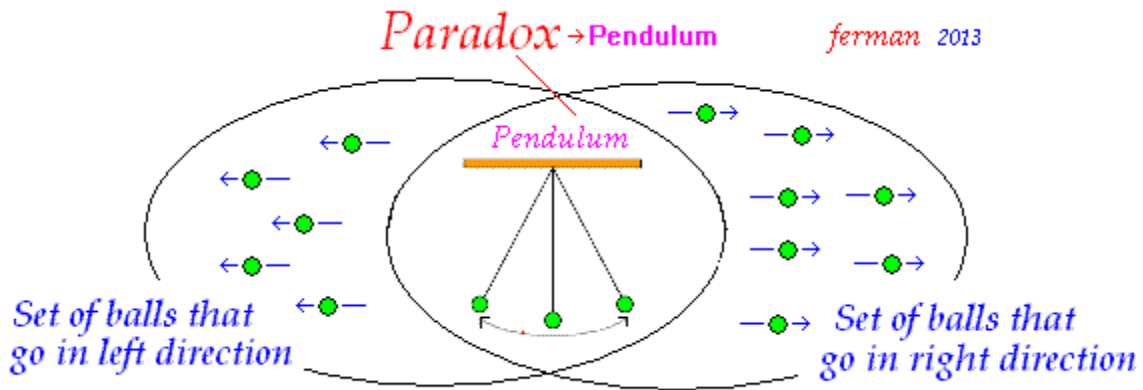# Paradoxes in mathematics (sets)

Definition
Intersections of sets
Of ferman: Fernando Mancebo Rodriguez
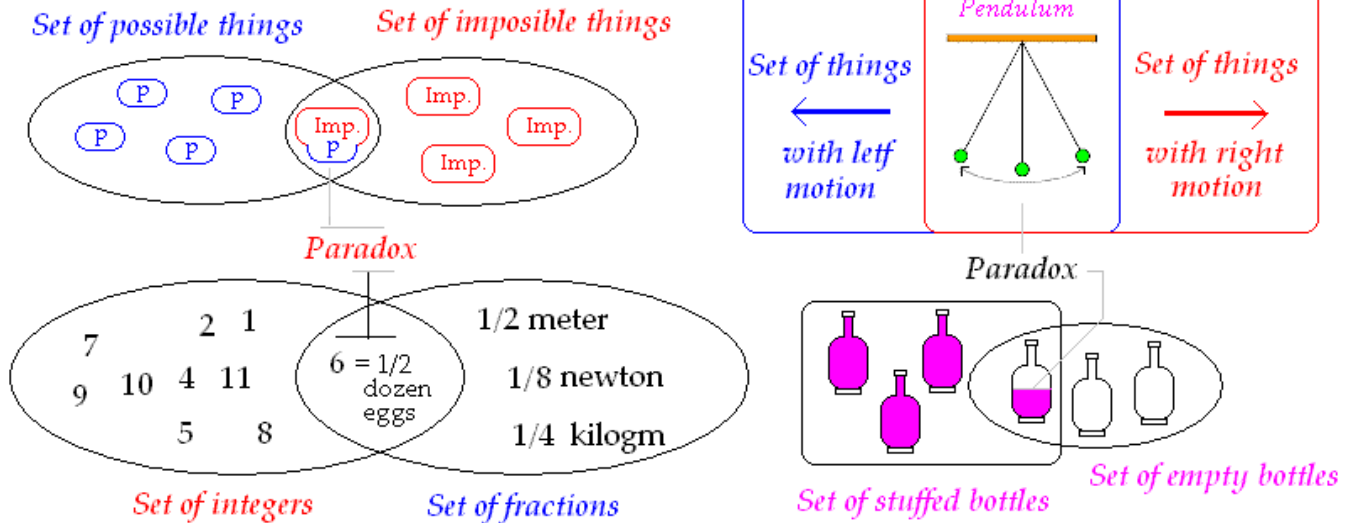

Paradoxes in mathematics
Intersection of antagonist or contradictory sets.

Paradoxes tend to the annulment or relaxation of their elements

Definition of Set-paradox:

In mathematics (set of elements) we can define paradox as the intersection of two or more antagonist or contradictory sets in which the elements that compose the intersection have antagonist properties and characteristics, and for this reason, the result is that they are annulled, weakened or form indefinite loops

The antagonism and disparity of inverse properties that these elements of intersection have create also disparity of solution that go from the total annulment, relaxation, birth of hybrid elements, circular loops, etc., all this depending of the diversity of properties that the set of elements have.

Examples

1.- Given two sets A (integer numbers) and B (fractions of special units)
The intersection would be a fraction of units that at the same time is an integer number, as for example can be half-dozen that at the same time are 6 elements.
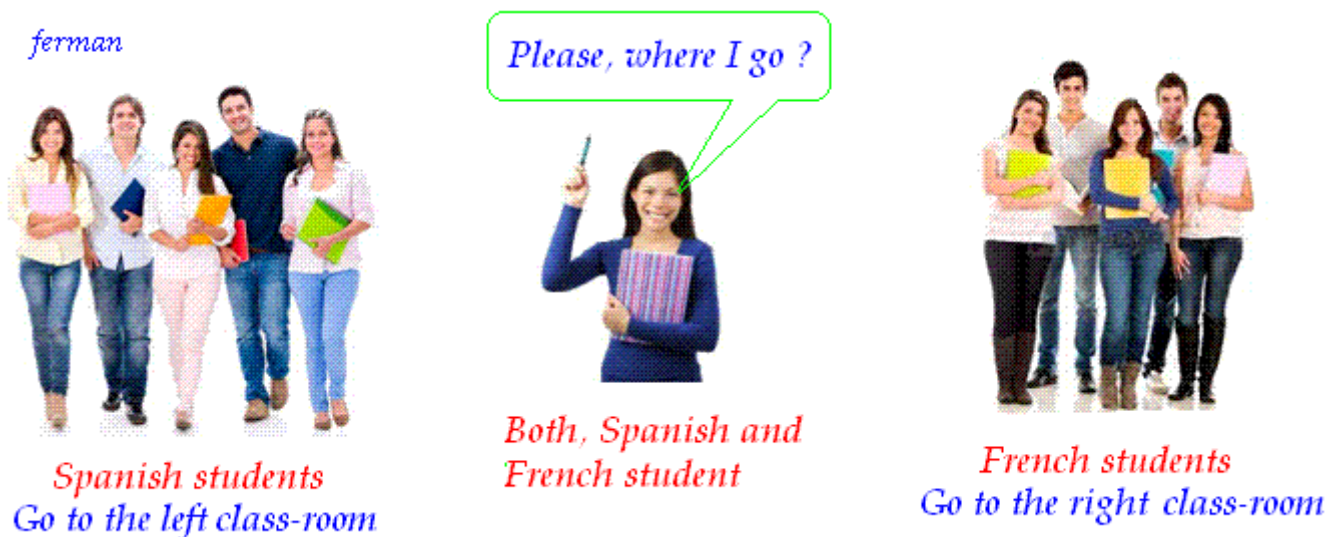
2,. Pendulum:
Given two sets, A (balls that have left motion) and B (balls that have right motion).
Their intersection would be a ball that is subjected to the both directions of motion, as can be the pendulum, which can be considered as a paradox of the right/left motion.

3.- Given two sets A (empty bottles) and B (stuffed bottles)
Their intersection would be a bottle half-stuff and half-empty, being this a paradox regarding to the concepts of full and empty

ferman

Please, where I go ?

Both, Spanish and French student

Spanish students
Go to the left class-room

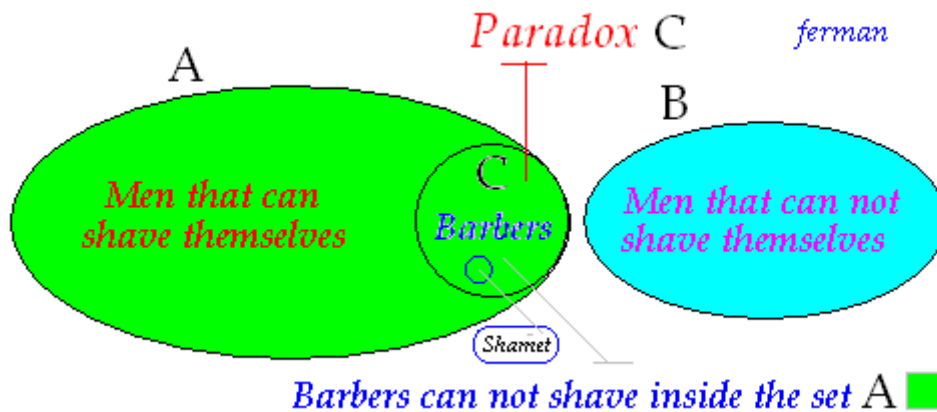French students
Go to the right class-room

4.- In the class-room the teacher says:
Please, the ones of Spanish language go to right side; and the ones of French language must to situate to the left side;
But Mary learns both Spanish and French. Then what does she do?

Paradox of the barber.

Paradox C   *ferman*

A

B

C

Men that can shave themselves   **Barbers**   **Men that can not shave themselves**

(Shamet)

Barbers can not shave inside the set A 🟩

In a far Arab Emirate, and for lacking of barbers, the Emir emitted an edict by which the barbers alone could shave to those who could not shave by themselves.
Although in a little village alone a barber existed, All Shamet, the one that due to the edict of the Emir and starting from then, alone could shave to those who could not shave by themselves.
This Emir order impedes that he could shave itself because he knew to do it.
But much more, not one barber could shave to other barber due to any barbers know shaving; neither they could save themselves due to Emir's edict didn't allow.

As we see, to this case we can study it as an intersection of two set A (men that know shave themselves) and C (barbers, which cannot shave to those that know make it by themselves.)
The barber Shamet belongs to the C set that is intersection of the C and A sets (or C subset of A).
In this case, when belongs to the set A, he could shave to itself; but when belongs also to the set C, he has not allowed to make it.
All this represent a paradox and it is due an intersection between two contradictory sets, A and C exists.
Or said in other way, an intersection among contradictory properties of sets exists, and so a set-paradox exists.

Centaur
Man-horse

Hermaphrodite
Woman-man

Siren
Woman-fish

Sphinx
Woman-lion

Vampire
Man-bat