Spatial Mathematics:

A New Theory of the Mathematical Representation of Space and Time

By

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Abstract

Most mathematicians normally attempt to incorporate a concept of time in mathematical statements. Numbers which represent numbers of fields can often times be incorporated into one's conceptualization of a universe which is compliant with scientific laws and regulations. Equations can predict the future by attempting to represent the values of fields in the future of the space-time continuum. Spatial Mathematics is an experimental proposal which attempts to further the understanding of events and representations of reality in a graphic depiction of space and time. The numerical and hypothetical calculations which will be presented in this proposal have been tested to the best of my knowledge. Time may not exist but numerical and alphanumeric representations of actual events and outcomes do seem to exist. The abstract theory of Spatial Mathematics is that time can be used to evaluate reality in a way that incriminates the universe in the formation of reality.

The Number Line

What Is the Number 0?

The number zero is a fraction of a number x which is divided by a number y where the number x is equal to the null set while the number y > 0.

$$F_{(z)[a]} = \frac{x_{[a]}}{y_{[a]}} = 0$$

If $x_{[a]} = \varnothing$ and $y_{[a]} > 0$ are true.

Field z at point in time [a] is equal to 0 if x at point in time [a], $x_{[a]}$, is equal to the null set and if y at point in time [a], $y_{[a]}$ is greater than zero.

Spatial Mathematics always assumes that the denominator of $F_{(z)[a]}$ will always have a value that is greater than zero. The numerator always represents a set that has nothing inside of it, which is the null set.

What Are the Percentage Numbers?

Percentage numbers are generally numerical representations of numbers which lie between 0 and 1 on the number line. The following is generally true of percentage numbers.

$$F_{(z)[a]} = \frac{x_{[a]}}{y_{[a]}}$$

where $y_{[a]} > x_{[a]}$
and $y_{[a]} > 1$
and $x_{[a]} > 1$

Field of (z) at point in time [a], $F_{(z)[a]}$, is equal to the value of x at point in time [a], $x_{[a]}$, divided by the value of y at point in time [a]. The number $y_{[a]}$ is greater than $x_{[a]}$, The number $y_{[a]}$ is greater than one and the number $x_{[a]}$ is greater than one.

Percentage numbers possibly exist when these constraints are met.

What is the number 1?

Generally, 1 is a representation of a fraction where the numerical value of the numerator is equal to the numerical value of the denominator. The following equation illustrates this point.

$$F_{(z)[a]} = \frac{x_{[a]}}{y_{[a]}}$$

where $y_{[a]} = x_{[a]}$
and $y_{[a]} > 0$
and $x_{[a]} > 0$

$$\frac{5}{5} \cong \frac{25}{25} \cong \frac{.5}{.5}$$

Field of (z) at point in time [a], $F_{(z)[a]}$, is equal to the value of x at point in time [a], $x_{[a]}$, divided by the value of y at point in time [a]. The number $y_{[a]}$ is greater equal to $x_{[a]}$. The number $y_{[a]}$ is greater than zero and the number $x_{[a]}$ is greater than zero.

A number is possibly one when these constraints are met. Note that 5 items in 5 baskets is not the same as 25 items in 25 baskets. The quantities that are represented in the numerator and denominator signify a set of something that exists in a set or sets of something else. 5 sets are not equal to 25 sets. 5 items are not equal to 25 items.

What is a Whole Number?

A whole number generally is produced by a number in the denominator of a fraction that is less that the numerator. The following equations illustrate this.

$$F_{(z)[a]} = \frac{x_{[a]}}{y_{[a]}}$$

where $y_{[a]} < x_{[a]}$
and $y_{[a]} > 0$
and $x_{[a]} > 0$

Field of (z) at point in time [a], $F_{(z)[a]}$, is equal to the value of x at point in time [a], $x_{[a]}$, divided by the value of y at point in time [a], $y_{[a]}$. The number $y_{[a]}$ is less than $x_{[a]}$. The number $y_{[a]}$ is greater than zero and the number $x_{[a]}$ is greater than zero.

The basic feeling about whole numbers is that 25 is just 25. 25 is 25 divided by one in reality. 100 divided by 4 can also equal 25, but 100 items divided by 4 sets is different than 25 items in 1 set.

Properties of Inequalities

If

$$x_{[a]} = \frac{y}{z}$$

and

$$\mathrm{x}_{[a+1]} = \frac{y+n}{z}$$

then

$$\frac{y}{z} < \frac{y+n}{z}$$

and

$$x_{[a]} < x_{[a+1]}$$

if $y > 0, x > 0, n > 0$ and $z > 0$

If

$$x_{[a]} = \frac{y}{z}$$

and

$$\mathrm{x}_{[a+1]} = \frac{y}{z+n}$$

then

$$\frac{y}{z} > \frac{y}{z+n}$$

and

$$x_{[a]} > x_{[a+1]}$$

if $y > 0, x > 0, z > 0$ and $n > 0$