

## The scalar behavior of numbers when their values are infinite

Noah G. King (Eski)

518-354-0396

[eski@eski.info](mailto:eski@eski.info)

<http://eski.info/>

**Postulate:** The assumption is that because decimals terminate at what is infinitely small and they represent the set of possible integers, the correspondent scale of numerators to the denominator of infinity in increments is digital and no longer accounts for decimals. That said, an equational graph with a numeric method which equates the rounded value of X is used and the integrals and areas from 0-x of the graphs is to be postulated, with the proportion of adjacent slopes, to be the related to the relative geometry of infinitely large values inverses with respect to their multiples and regular numbers as they are physically measured. While computers and calculators may express the value of  $(x*(inf))/(inf)$  as equals to  $y=x$ , it is just as simple to equate infinite values using this relationship and derive potential statistically accurate substitute values in typical algebraic limits of undefined points. The next section includes proof.

### Equations and proof:

Because :

$$\left(\frac{x}{k}\right)^{\infty} = \left(\frac{x}{k}\right)^{\infty} = \infty \text{ if } k < x; \frac{1}{\left(\frac{x}{k}\right)^{\infty}} \text{ if } k > x; 1 \text{ if } k = x \dots$$

This means that:

$$\text{inf scale}(x) = \sum_{k=1}^{\infty} \frac{\left(\frac{x}{k}\right)^{\infty}}{\infty \left(\frac{x}{k}\right)}$$

$$= \sum_{k=1}^{\infty} \frac{\left(\frac{x}{k}\right)^{\infty}}{\infty * \left(\frac{x}{k}\right)}$$

*infscale(x) also equals:*

$$= \sum_{k=1}^{\infty} \frac{\left(\frac{x}{k}\right)^{2\infty}}{(2 * \infty) \left(\frac{x}{k}\right)}$$

$$= \sum_{k=1}^{2x} \frac{\left(\frac{k}{x}\right)^{\infty}}{\infty \left(\frac{k}{x}\right)}$$

*Infscale(x) can be presumed to equal the scalar value of x as a multiple of infinity if  $1 = \infty$  because ...*

*If the operators of infinity in this equation are a finite number, the equation functions to produce repetitive infinite sums converging from equalling to the formula*

$$y = x \text{ when } \infty = 1$$

*and as  $1 = \infty$  we see it becomes*

*the rounded value at x.*

The equation technically converges with high precision when the sigma iterations, the power of the numerator and the base of the denominator are all adjusted

towards inf. exactly from  $\text{infscale}([-1 < x < 1])$ ; but since infinity has not been quantified and its power principle of itself as a base is multiplied by an infinite power, it is theoretically an always-infinite power even when inf. is put to the first power; since infinities may be an undefined set whereat the relation  $1 * \text{inf} \neq \text{infinity}$  because 1 is technically  $1/\text{inf}$  to infinity. This implies we can safely use computational space to refer to infinity as a relationally infinitely scaled set of possible numbers and thereby it holds relational properties whereat infinitely small decimals may count up as integers when scaled linearly by inf.

Because any possible numeric substitution for inf. as a power to a number is quantifiably a decimal to infinity as well, numerically we can relate powers of infinity to the integer-power infinite roots analogy and vice versa, and find that only scalar proportions  $n/\text{inf.}$  can be multiplied by inf. to achieve a realistic numeric value that is finitely expressible. Therefore without implying infinite zeros after ever decimal notation, you cannot efficiently imply sub-decimals (i.e. 3.5.2) as a true number as the process is redundant.

In mathematics the scalar identities of sub-decimals would be consequent divisions of infinity; and when used in operations with infinity can yield new numeric methods for the potential geometric establishment of new number construction processes for infinitely large or small numbers, and expanding them to integer analogies later. In the geometric theory this is to imply infinity as a transcendental number that still possesses geometric properties on our numbers when certain rules are applied to arbitrary calculations that use it, since inf. is not previously able to be expressed or used as a true number value in computers. It would also be the only number not allow for algebraic simplification.

This allows us to conclude that  $\text{scale}(x)$  is the representation of all possible numbers when  $x = \infty x$ . This is probably because decimals are infinitely small when compared to their whole values when  $x$  is divided by infinity, or when 0-1 is expanded as the range of possible integers by their order of magnitude.

Technologically, numbers from the derivatives or integrals or other transformations of this formula may reference to significant numbers in certain spatial or transformational sets, which can be assistive or relevant in geometrical problems, especially when given to simulate or emulate infinite variables.

**An application of  $\text{infscale}(x)$ :**

This equation will give theoretical zero limits or zero values at only positive prime numbers:

$$\left(\sum_{n=1}^x \left(\frac{x}{n} - \text{infscale}\left(\frac{x}{n}\right)\right)! - \left(\frac{x}{n} - \text{infscale}\left(\frac{x}{n}\right) - 1 + \left(\frac{x}{n} - \text{infscale}\left(\frac{x}{n}\right) - 1\right)!\right) - (2 - (x - \text{infscale}(x + \frac{1}{\infty})))\right)$$