

Dear Eric,

The Four Quadrant Theory of Electricity has ramifications not only to the four limits possible to the hyperbolic function of division, but also to the four possible definitions of dividing a number by zero. Zero is but one hyperbolic limit; the other is infinity. One's complement arithmetic is used by machine programming at the fundamental level of a computer's mathematical operations and relies upon two infinities: one's and zero's filling up each place value (called a 'bit') in a computer's register of 16 bits, or 32 bits, or 64 bits, etc. Thus, a numeric value is actually composed of a mixed set of multiple instances of both archetypes of infinity. The Vedas claim two types: PURNAMIDA PURNAMIDAM. Two fullnesses: fullness of fullness and fullness of emptiness. Remove fullness from fullness and fullness remains. This redefines the division by zero problem into four possible permutations of two types of hyperbolic limits:

1. Division of Zero by Zero
2. Division of Infinity by Infinity
3. Division of Infinity by Zero
4. Division of Zero by Infinity

One of these is undefined and another is [indeterminate](#). The two remaining cases are completely definable. I forget which is which and I don't have access to my notes. But if I had to reguess the ensuing logic off the top of my head, then...

- Division of Zero by Zero is indeterminate and heuristically equivalent to dividing zero by zero and also equivalent to zero times something equals zero, ie $0 \times 1 = 0$ and $0 \times 0 = 0$. So, zero divided by zero is indeterminate.
- Division of Infinity by Infinity is completely defined and heuristically equivalent to dividing one by one and also equivalent to one times something equals one, ie $1 \times 1 = 1$, or $1 \times \infty = \infty$. So, infinity divided by infinity is infinity.
- Division of Infinity by Zero is not defined and heuristically equivalent to dividing one by zero and also equivalent to zero times an indeterminate cannot equal one, ie $0 \times i \neq 1$. So, infinity divided by zero is undefined.
- Division of Zero by Infinity is completely defined and heuristically equivalent to dividing zero by one and also equivalent to one times zero equals zero, ie $1 \times 0 = 0$. So, zero divided by infinity is zero.

Conclusion...

Division by infinity – negative zero in one's complement arithmetic – is safe.

Division by zero is sometimes impossible and sometimes fuzzy.

Hence...

Division by zero is not entirely impossible.

Since the value of 'one' can be replaced by any other value stretching upwards towards infinity and includes infinity, itself, these four permutations of division define all cases of dividing anything by two types of everything by assuming a similar archetypal condition exists with the numerator as with the denominator.