Re: On Well−Ordering(s) and Sets Dense in the Reals, Infinity

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About the infinite binary sequences, there are definitely considerations to be made about the density of the elements, and restrictions on the sequence element interchange in permutation. There's only one sequence of binary digits that represents the number zero.

I'm hoping you would briefly summarize, in an obvious way, the functions you mention not defined over the reals, and the utility of transfinite cardinals. For many, the lack of applications of transfinite cardinals for solving real−world problems is the (a) primary source of apathy about them. I have just been very casually examining the measure theoretical foundations and have not seen non−geometric examples.

I'm not a geometer, but I notice that geometry is very useful in solving real−world problems.

You say all of analysis is under measure theory, or that it's expressible in terms of measure theory. Where analysis is the integral calculus, is not that all about functions on the real (and complex, hypercomplex) numbers? A lot of people do integral calculus without regard of measure theory. I don't think of functional domains in the integral calculus without geometric structure.

Could you provide an example of the use of the powerset of the continuum? Do you have an example of an analytical result over a non−empty domain of measure zero with a geometric analog? That is to say, is there a simple example of a set with measure zero leading to a result that is any different than that for an empty set, and derivable by other means, or are all sets of measure zero the empty set?

Searching for information about "zero probability", "infinitesimal probabilities", "nonstandard measure theory", "nonstandard probability", leads to some discussion of intuitive and also counterintuitive results in measure theory. When I ask about "complex

measure theory" I'm asking about "multivariate" and "multidimensional
measure theory." I hear buzz about these "probability density
functions."

There are everywhere reals between zero and one. They're not "only"
real numbers, but they're all real numbers.
Hey thanks, that helps me understand. Regards,

Ross Finlayson