Re: Exact−Point paradox

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> Dear William Hughes and Laureano Luna:
>
> for the number 0.999... , you cannot deny there are
> INFINITE REAL
> NUMBERS contained in this 0.999... every one of them
> is bigger than
> zero , which leads to k* 00 = 00

Before anyone can agree or disagree, you will have to say what you mean by one number "contained" in another.
And are you talking about NUMBERS or a particular decimal representation of a number? If you are talking about numbers themselves why not just say "there are INFINITE REAL NUMBERS contained in 1"? 0.999... is just a (slightly unusual) representation of 1.

> (00 means INFINITY)
>
> better explination is this:
>
> 1) For 0.999... there are infinite 9s , every 9 of
> them is a
> positive real number by itself "no matter how small
> it is "
>
> 2) Every 9 of them is NOT JUST A POINT, it is a
> positive real number
> bigger than zero, which means, if any one of those 9s
> is represented
> on real numbers line, then it has a start point and
> an end point and
> between those points there are infinite points like
> any other real
> number.

The "9"s in .999...are neither points nor numbers− they are numerals, symbols representing particular things.

If, on the other hand, you are talking about the numbers represented by .9, .99, .999, .9999, etc. then, yes we can think of them as points on the number line and there are an infinite number of points between each pair of them.

> 3) because there is an infinite number of positive
> real numbers bigger
> than zero " the 9s in 0.999.." , then in 0.999.. we
> have the
> addition of infinite positve real numbers which must
> be INFINITE .

Where did you get that idea? Most students in pre−calculus learn how to sum infinite series− the sum of an infinte set of positive real numbers is NOT necessarily infinite. In a good secondary school algebra class you should learn that, if −1< r< 1 then the "geometric series", summing ar^n, although the sum of infinite numbers is the finite number a/(1− r). In particular, 0.999... is, BY DEFINITION, the sum 0.9+ 0.09+ 0.009+ ... which is a geometric series with a= .9 and r= .1 It's sum is .9/(1− .1)= .9/.9= 1.