Online Activity

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1. I was very thrown off by the fact that infinity was such an involved subject that couldn't be defined by algebra. The way that she explained infinite through with the repeating number of 9 and the consistency of how this proof work was very interesting to me. I also learned that the concept of infinity is very much integrated in basic multiplication and the abstraction that comes with some very intuitive calculations. Plus, I did not understand that infinity was not a real number before. I didn't know what hyper real numbers were, and I was very intrigued by the difference in mechanics of the hyper real numbers. The "There is no difference" proof explanation gave me an idea of how to prove via showing that these numbers have no difference once evaluated.Zeno's paradoxes was very interesting too and how the numbers always fall short of one, but the definition of infinity makes the idea of these halves practical. I was wonder what other paradoxes have mathematicians come up with for infinity? What other works has Zeno contributed to the field?

2. I was really intrigued by the fact .999 does not equal one, and that all reasons for it are invalid. Also, it was a great reminder that you cannot assume before you prove, that every detail and axiom must be constricted to the well-defined rigor that makes something like a theorem logically sound. Also, the way integers cannot add up to 1, if the leading tenth place is missing was really eye-opening. I never thought of numbers behaving like that because I never imagined what might go on with infinitesimal numbers, and I never imagined there might be more than one type of infinity. After this video, my question would be what physical phenomena must be observed at this level of infinite intensity? How must formulae and theories be constructed to fit the rigor that comes with the definition of infinity?

3. This video really showed me how connected numbers are, and I didn't

know what Aleph null was before. The way she describes it seemed a bit tedious at first, but when she starting crossing through the different series of numbers in the list, I got a good idea of how these numbers are visually pictured by mathematicians. I had not head of Cantor's Diagonal Proof before either, and I was really interested in how it explained the idea of how theoretical infinite list of numbers as she had been trying to do in the video. What I ask after this, is how did Mathematicians fall upon Cantor's proof? What other ways are there of coming upon the ideas that Cantor described? How can the same idea in this video of infinity be described with something like Euclidean geometry.