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Pep Vidal: Constantly Variable

Abstract:

I was attending my first Calculus class and the teacher tried to explain us how one can manage to “feel” that between 0 and 1 there are infinite numbers. He drew a line on the blackboard and wrote respectively 0 and 1 at its two extremes. He said: “So, we have this line and the extremes are representing 0 and 1, all right. What if I move closer to the blackboard and focus on the initial part of the line?” The teacher did go closer, put his nose ON the blackboard and in that position he continued talking: “Well now I’m only seeing a small part of this line, let’s say that it is the part between 0 and 0.1.” So he changed the 1 at the right extreme by 0.1, leaving the line exactly as it is, same position and length. “Ok, now the extremes are representing 0 and 0.1. What if I move again closer to the blackboard and focus on the initial part of the line?” You can guess what happened next: he changed the 0.1 at the right extreme by 0.01, same line, same length. He repeated the example as many times he needed in order to get his nose completely white with chalk.

This example is telling us that everything is relative, it's about how "close" you are to the blackboard, having infinite numbers to choose.

0 ———————— 1

0 ———————— 0.1

0 ———————— 0.01

0 ———————— 0.001

0 ———————— 0.0001

0 ———————— 0.00001

0 ———————— 0.000001