

Homework #10

This week's homework is essay questions! I don't expect you to write some well-researched academic papers— these are just personal reflections.

You absolutely don't have to agree with any of my own thoughts that I gave in class. You don't even have to agree that these questions are important or interesting at all.

I would appreciate if you type your answers, but you can do it however you like.

Question 1. In class, I tried to explain why it is interesting that some languages are not recursive. I claimed that this is not just mathematically interesting, but also has implications about human beings and how we see ourselves. Explain in a few paragraphs or so what you personally think of this.

If you like, you could try to respond to one or more of these questions: does it change your attitude about electronic computers? Does it change your attitude about human brains? Does it make you feel better or worse about your place in the world? Does it make you see yourself or other people differently? Does it make you feel differently about the power of mathematics to discover truths about the universe?

Question 2. For this one, imagine you are talking to someone who doesn't know any advanced mathematics beyond a typical high-school level. Please explain in a paragraph or so why the existence of uncomputable numbers (such as Chaitin's Ω) is interesting. If you actually don't think it's interesting, you can try to explain that. Does this change anything about how you think about mathematics in general?