Writing assignment for Thursday, August 29

Homework for Thursday: Spend a minimum of thirty minutes thinking and/or writing about *continuity*. You *must* turn in something written (or printed) to me on Thursday by beginning of class.

Depending on who you are, this is best treated as a journal entry. Depending on who you are, this is best treated as a paper. While freedom is often burdensome, I am giving you the freedom to choose whatever framework/format you want to utilize.

The only (subjective) requirement is that I get some insight into how you are thinking, and where you are in your understanding. The point is *not* to show me that you understand, but that you are thinking or exploring or questioning.

Your thinking may go along the lines of:

- I have this thing called an epsilon-delta definition. What does it mean? Does it capture the examples I had in mind? Does it capture the more vague ideas of continuity that I can articulate?
- Are there better "definitions" of continuity? Can I think of any?
- Are the things I think of precise?
- Why is continuity useful anyway?
- I have no idea what's going on. Why don't I? Where am I stuck? Which part of the definition is inaccessible to me?
- I think I know what continuity is supposed to mean, at least in my heart. Here are some examples of continuous functions. What phenomena do these examples capture? Can I do better than examples?
- This assignment is stupid. Why do I have to do it?

You do *not* need to answer each, nor any, of the above questions. The questions above are just meant to give examples of things you, or your classmates, may naturally want to ask. I want you to take the time to really think about what continuity could mean, and what it could capture.

Recommended time: 20 minutes of thinking alone about continuity (I recommend having paper and pen in case you want to write

or draw as you think), and 10 minutes of writing to communicate what you have thought about.

More advice: It is imperative that you really have time to just think. I would even suggest putting away phones and computers, so you have the time to think about continuity.

More commentary: I am willing to bet money that most students in the country have never thought hard about what continuity (in the context of continuous functions from $\mathbb{R}$ to $\mathbb{R}$) means. I want you to do better than most students.