

Math 255 - Spring 2022  
Metacognition assignment prompt

Every week this semester, you will have the opportunity to submit a metacognition essay to help you reflect on your learning. Your essay should be at least one page, double spaced, in 12pt font (or a half page single spaced).

For each essay, answer **one** of the following questions. You may answer a question more than once in the semester, but your answer should be substantially different than the last time you answered it.

1. What is an assignment, problem or question you worked on this week that you struggled to understand, solve or complete? Explain how the struggle itself was valuable. In the context of this question, describe the struggle and how you overcame the struggle. You might also discuss whether struggling built aspects of character in you (e.g. endurance, self-confidence, competence to solve new problems) and how these virtues might benefit you in later ventures.
2. What mathematical or computational ideas are you curious to know more about as a result of the material you have learned this week? Give one example of a question about the material that you'd like to explore further, and describe why this is an interesting question to you.
3. How has your mathematical imagination been enhanced as a result of learning this week's material? Give at least three examples.
4. Consider one mathematical or computational idea from this week's material that you have found beautiful, and explain why it is beautiful to you. Your answer should: (1) explain the idea in a way that could be understood by a classmate who has not yet taken this class and (2) address how this beauty is similar to or different from other kinds of beauty that human beings encounter.
5. Give one example of a mathematical or computational idea from this week's material that you found creative, and explain what you find creative about it. For example, you can choose an instance of creativity you experienced in your own problem-solving, or something you witnessed in another person's work.
6. For any problem or assignment you could not solve this week, suggest a strategy you might try to tackle the problem, and show what happens if you try it. Describe any strategic gaps you are unable to bridge, and list 3 helpful insights that may help another person trying to tackle the problem.
7. Choose one interesting question or problem connected to the class, of medium difficulty and that was not assigned. Describe why you find it interesting. Then either answer/solve it, or find an answer/solution online and work through it, using your own

understanding to critique that answer/solution and improve it. If you use material from online, don't forget to cite your source!

8. What is a victory that you have achieved this week in the class? It can be a difficult problem that you solved/assignment that you completed after a long period thinking about it, it can be speaking up during class, anything that you are proud of yourself for. Explain how you achieved this victory, and how you might build on it as the semester continues.
9. Discuss your goals in the class, in terms of which qualities or skills you wish to develop in yourself. What kind of mathematical practices might help you reach these goals? If answering this question more than once, discuss how your goals are changing during the semester, and how your mathematical practice is evolving.
10. Explain the impact of COVID on your work this week. Did you have trouble focusing for any reason (roommates or family always around, bad news, etc.)? Were you unable to get any work done? Or to the contrary, did you work better because you couldn't go anywhere? Did you find comfort being around your loved ones?