

Homework 9

Math 300, Fall 2022

This homework is due on Friday, October 21.

1. (*This problem is NOT to be turned in.*)
 - (a) Read Section 5.2
 - (b) Section 5.2 #2
2. Read the first few pages of Chapter 13 (“Flow”) from *Writing Science* (Schimel), provided in class (and available online via the TAMU library). Did anything in the chapter surprise you?
3. Let $f : A \rightarrow B$ and $g : B \rightarrow C$ be functions. Prove or disprove the following:
 - (a) If $g \circ f$ is bijective, then f is bijective.
 - (b) If $g \circ f$ is bijective, then g is bijective.
4. Let $f : A \rightarrow B$ be a function. Prove or disprove the following:
 - (a) If there exists a function $h : B \rightarrow A$ such that $h \circ f = I_A$, then f is onto.
 - (b) If there exists a function $h : B \rightarrow A$ such that $h \circ f = I_A$, then f is one-to-one.
 - (c) If there exists a function $h : B \rightarrow A$ such that $f \circ h = I_B$, then f is onto.
 - (d) If there exists a function $h : B \rightarrow A$ such that $f \circ h = I_B$, then f is one-to-one.
5. Section 5.2 #1
6. Section 5.3 #7

Writing Assignment 5

Math 300

This homework is due on **Friday, Oct. 21**.

This week, you will critique another student's draft. Staple your comments to the draft, and make sure both your name and the author's name appear on the front. Do not staple this to the rest of your homework.

- (a) Read through the draft. Mark each spot you got confused. Mark each spot where the author could better implement the ideas from the chapter on *flow* (see HW 9).
 - (b) What questions do you have for the author?
 - (c) What aspects of the draft did you like?
 - (d) What could the author do to improve this draft?
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Writing Assignment 6

This homework is due on **Friday, Nov. 4**.

- Extend your draft to include four sections of your final paper:
 1. the introduction (what will your paper be about?),
 2. the mathematical background (define and/or explain all unfamiliar terms), and
 3. *two* sections developing main ideas from Writing Assignment 3.
- *Edit your draft in response to all comments (to be given next week).*
- The required length is at least four pages.
- *Please print 1 copy of your draft.*
- If you do **not** turn in this draft, you will receive a 5% penalty on the final paper.