

Math391 Fourth Meeting

Assignments to Be Completed Prior to Fifth Meeting

a. Classroom observation:

- For this part you have a choice. Do either 1 or 2:
 1. Focus on identifying instances where a student has a clear mathematical misconception. In your write-up, give an example of a student's misconception. Then develop some questions (4-6 questions) that you would ask that student to uncover the reasoning process, and to lead him/her to realize and correct the misconception. If it's possible, ask permission from your host teacher, and ask the student those questions you developed and comment on the student's answers. If not, then just write your questions.
 2. Focus on identifying instances where a student gives a novel or insightful solution to a problem. In your write-up, give an example of a student's (correct) solution to a problem that surprises you. That is, you thought about the problem differently or had a different solution. In each case, describe the problem and the student's method and solution in detail. Create a new problem and use the student's method or insight to solve it.
- I am sure there are at least two or three students in your classes you observe who are not engaged at all in class discussions, and activities. Pick a particular class where you see these students. Explain what you think why they are not engaged. (You can focus on one student, if you wish.) Explain what your host teacher does to try to involve those students, and what you would do to grab their attention and make them more engaged.

b. Required reading for next meeting:

Read Chapters 5 and 6 in the book (*Connecting Mathematical Ideas* by Jo Boaler and Cathy Humphreys). Also, watch the corresponding videos from the CD. Write a brief summary (no more than two pages) of these texts and video. Again, your summary should be focused on what you think are the most salient and interesting points, and express your overall opinion of the texts. Connect your comments with the Toothpick problem I gave you in your second assignment.

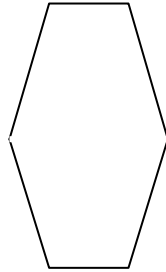
c. CSUN mathematics courses:

The study and development of mathematics revolve around deducing one thing from another. Can you recall when you were introduced to mathematical proofs? Do you recall any particular proof that you found very neat when you first saw it?

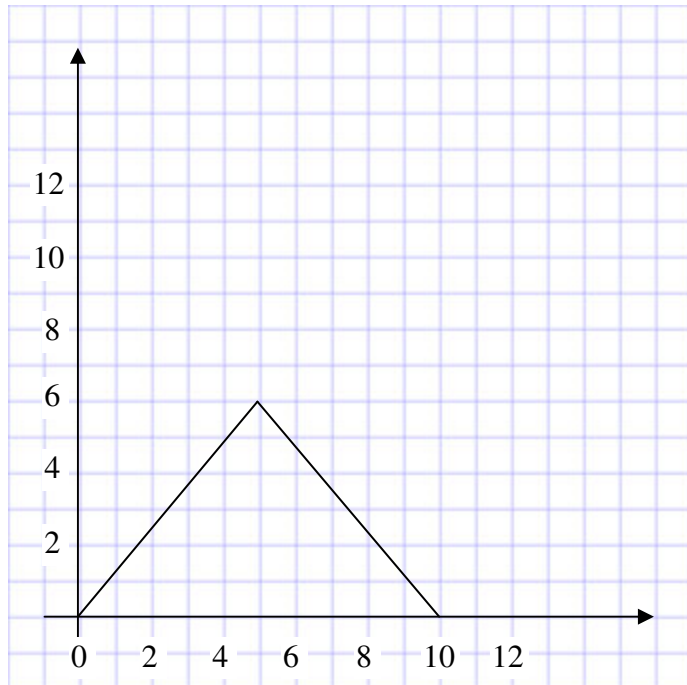
d. Interesting problem:

A student is given the following problem:

A vase is 1 foot tall, and its shape is drawn below. Imagine you are filling this vase with water. Assuming that you pour water at the constant rate, it takes 10 seconds for the vase to be filled completely. Sketch a graph of the height of water versus time.



The student provides the following response:



What misconceptions are evident in the student's response?

Draw the correct solution.

Write a few questions that you would ask the student to clarify the misconceptions.