

## MATH 414 READING ASSIGNMENT 2

Apr 25, 2011

Answer the following questions. Your answer to each question should be at least a paragraph and no more than about two pages. In particular, one-sentence answers are not sufficient. In grading your answers, I am primarily interested in seeing that you have carefully read the handout by Dr. Ma and you have spent some time thinking about how it relates to your understanding of your career as a teacher.

This assignment counts for 5% of your grade in this class. It is due in class on 5/9.

1. I have met many U.S. teachers and prospective teachers who will argue that understanding the rationale behind procedures and algorithms they teach is irrelevant to their jobs if that rationale is not specifically included in the curriculum they are expected to cover. They feel similarly about knowing mathematical content beyond the grade level they teach. Contrast this with Dr. Ma's Profound Understanding of Fundamental Mathematics. What characterizes PUFM? Is it important for an elementary teacher to have PUFM and why? Why do you think so many U.S. teachers lack PUFM?
2. International surveys of mathematical ability in K-12 consistently show Chinese students among the strongest in the world. The U.S. does not do as well. (In fact, the U.S. used to be one of the weakest among developed nations, but has made some positive progress in recent years.) Chinese people are well represented among graduate students and faculty in technical fields at U.S. universities and among the employees of high-tech firms. There are obviously many social, economic, and cultural differences between China and the U.S.A. Do you think that the difference between the skills of Chinese and U.S. elementary teachers is a significant factor in the success of Chinese students? Can you think of other factors that may be significant?
3. Dr. Ma is Chinese and used to be a teacher and an educational administrator in China. She currently works for the Carnegie Foundation for Advancement of Teaching. Do you think that she is biased in favor of the Chinese teachers as a result of her background? If you do, can you find evidence of this in her writing?
4. How did this reading influence your view of your own future profession? Did it give you any ideas that you plan to incorporate into your practice and philosophy of teaching? Did it influence your attitude toward learning mathematics?