

M316K – Foundations of Arithmetic
Spring 2009
Problem Set 6 – Due Friday, March 6

“If you would make a man happy, do not add to his possessions but subtract from the sum of his desires.” – Seneca



I’ve made this week’s problem set shorter than usual because I want you to focus on studying for the exam this weekend, and because I want you to have some time to start working on the project this week.

The usual rules apply: if the answer’s in the back of the book, I don’t need you to work out that part. Still, you should work out these parts on your own, and *then* (and only then) look in the back of the book to see if you got them right!

One more remark: Some of you have been losing a lot of points on homework over “silly” mistakes – putting digits in the wrong place, making a slight calculation error, forgetting a step here or there. I realize that it is distressing for you when you feel like you’ve done 100% of a problem set but you’re only getting 50% of the possible credit for it. It is distressing for me too. However, **you** have the power and the resources to keep this from happening. Check your answers meticulously. Talk with your classmates; see if you can find someone to compare answers with. (Note that I am urging you to *compare* answers, not copy answers; copying answers is forbidden.) If you’re working on homework in a group, you may want to see if you can use someone outside the group as a “sanity check.”

Section 3.2: 6, 7, 15*, 18*, 21, 25, 28.

Instead of doing problem 15 mentally, I’d like for you to work it out by hand, and show how you did it. This problem is interesting because subtracting times (such as 5:15 – 2:34) is a bit different from subtracting ordinary base-ten numbers.

In problem 18, Bassarear asks for the “least difference”; I want you to take that to mean the least *positive* difference that you can get. This is actually more challenging than it may seem at first.

Bonus Problems

B1. Find the value of the following expression. Explain how you got your answer.

$$1 - 2 + 3 - 4 + 5 - 6 + \cdots + 2007 - 2008 + 2009$$