

M316K – Foundations of Arithmetic  
Spring 2009  
Problem Set 13 – Due Friday, May 1

*“God invented the integers; all else is the work of man.” – Leopold Kronecker*



Keep working hard. You're almost done!

**Section 5.3:** 3\*, 16\*, 25, (35), 49.

On Problem 3, please explain how to answer the questions without doing much (if any) calculation. With the possible exception of one of these problems, you should be able to answer these questions entirely using fraction sense – the same skills you learned in the exploration on comparing fractions.

On Problem 16, ignore Bassarear's instructions to find an estimate and then get an exact answer. I just want the exact answer this time.

You don't have to turn in Problem 35, but this is another useful way to understand division of fractions, and you should be prepared to explain it to me if I ask you about it.

**Section 5.4:** 1, 10, 11, 15, 16, 20, 22, 38.

I don't have any special instructions for you here, except that on multi-part problems like 1, 10, and 15, you don't have to write the parts whose answers are given in the back of the book.

**Bonus Problems**

- B1.** Essay question: What was Kronecker really saying in the quote at the top of this week's problem set? (*Hint:* The central idea of the quote doesn't have that much to do with God; it's more an idea about mathematics than an idea about God.) Do you agree or disagree with this idea?
- B2.** Your friendly instructor will turn  $C$  years old in November of the year  $C^2$ . (This is a fact, not just a fabrication I came up with for the sake of a cool number puzzle, though if there were ever a good reason to lie about my age, this would be it.) How old am I now?