I’ve just begun mentoring a pair of first year graduate students as part of Berkeley’s mentoring program (recently revamped by the student group Unbounded Representation). Thus, I’ve been recently wondering about the following question: What is the most important piece of advice for a first year graduate student in mathematics?

I offer my opinion below the fold. In addition, Adam Boocher, who is a 2nd year graduate student (I’m in my 5th year) will offer his opinion in a companion post on this blog. We’re also curious to hear from anyone else with an opinion on this question (especially those of you that disagree with us!)

I think that the most important piece of advice for a first-year grad student is this: it’s all about research. This is a sharp departure from undergraduate mathematics, which is focused on coursework. Once you understand that research is the priority, this has implications for how you spend your time during your first year. Here are the main implications that I can think of:

1. Selecting an advisor is your most important task. Try to get to know every professor that you might be interested in working with. This means attending research seminars and tagging along for lunch/dinner/beers afterwards. If your department has teas, you should attend these. These activities take up time, but they are more important than spending time on homework.

2. Attend seminars. I already mentioned this above, but this is also important for getting a sense of the research landscape. Attending seminars is a painful experience for your first few years of graduate school, but it is nevertheless important. Professor Ravi Vakil at Stanford has a fabulous webpage of advice, including advice on why/how to attend seminars. Read his explanation.

3. Don’t waste time! When you apply for jobs, you’ll be judged largely based on the research that you’ve done. Thus, the earlier you start doing research, the more papers you’ll have completed. Once you’ve settled on an advisor, try to pass your qualifying exams and begin doing research as soon as possible.

4. Get to know other graduate students, including those older than you. This can be extremely valuable when you start doing research, since you’ll have friends with expertise in other areas. My research has benefitted tremendously from conversations with my fellow graduate students, and I have even had the good fortune to collaborate with a couple of them.