A change is as good as a break.

A wise man named William Young (rest in peace Bill) once said

> *A change is as good as a break.*

This is a great mantra when you have more things to do than seems humanly possible... Like in your last year of grad school...

Things to do: categories

You will have many many things to do which fall into these general categories:

- The THESIS beast itself. Like, actual mathematics. This includes both the fun parts and the tedious calculations.
- The university crappo. Like thesis formatting, printing your thesis on that special paper, going to some official office and filling out paperwork.
- The job crappo. Applications - filling out, writing cover letters, writing teaching and research statements, printing address labels, mailing it all out/applying online (YES!) when possible.
- The thesis-WRITING crappo. Figuring out all the beautiful subtleties of Latex, how to make pictures/graphs?? how to make things look okay, word choices, sentence structures...
- Your mental and physical well being. Yes, you need to take care of this too.

Helpful hints for the actual mathematics

You WILL get stuck. Many times. This does not mean you should go play video games on your computer or surf the web. Surfing for real might be okay because physical activity is invigorating for the mind as well, just don't spend all day at it. Now, if you're really stuck but you still want to achieve something productive in terms of research try the following:

Thesis hints

- Read a well written article related to your sticky question on which you're stuck.
- Think of a very simple example related to your sticky question, something so simple you can actually COMPUTE it. COMPUTE/CALCULATE/SOLVE something easy (or at least standard). Like write it up as if you were doing homework.
- WIKIPEDIA - look up some relatively basic/broad math thing that you're interested in. Or look up other science related to applications to your research.
- WRITE UP WHAT YOU'VE DONE. When you finish something, write it up so that it's *really* finished down to the last ϵ AND it's Latexxed up all pretty.
- If you are "articled-out," check out a good classical math BOOK related to your research and read some of it and attempt some of the problems to make yourself feel smart again.

Helpful tips for advisor relations...

Unfortunately, when we are writing our theses, at the beginning we pretty much suck. And what we write kinda sucks too, so of course, nobody wants to read it. For your advisor, it's not interesting either, unless you completely ROCK the socks off and are proving stuff your advisor hasn't already thought out (this is really unlikely). So remember this when you're trying to get the advisor to read your drafts. Professors are generally VERY busy and reading your thesis is the LAST thing they want to do :(You can help them with this and here are some tips.

Advisor relation hints

- Instead of asking advisor to read a huge chunk o thesis, give it to them in smaller sections.
- Be persistent to the point of obnoxious...
- With anything you can, rather than asking advisor to read your writing, explain in their office in detail what you've done so they can just sit there and pay attention (easier than reading). Then write it very carefully yourself.
- Read math articles that you find well written and try to write like they do. It's okay to imitate certain phrases that sound good, word choices, etc.
- If you have some humanities friends, they can help you with the actual writing aspects of your thesis. Your advisor really shouldn't have to be bothered about THAT part of it...

Don't expect your advisor to know everything

The advisor does NOT know everything. You will need to do your own research too - ask around, look online, etc. The jobs your advisor suggests, the locations etc - are not the ONLY jobs out there! Go exploring and be ambitious and you could find your own "ideal job" which your advisor might not have ever considered/thought of etc. Remember - you can apply for postdocs at research universities, OR tenure-track positions at liberal arts colleges, OR for industry jobs. OR... ??? You come up with it. What do you want to do both now and in the long run?

Only apply for a job in Korea if you would ACTUALLY accept it...

Yeah, oops, my bad. There are some places that you might not want to live - as in places that given the choice of moving there for a job and getting a job as an accountant - you'd choose to be an accountant and at least live in your choice of city (country). When you're applying for jobs, if you KNOW you would NOT work at Alabama State, or say if you are absolutely horrified of NYC - don't waste your time applying to those places! Think carefully - how much do you love your math and where could you realistically survive for however long the job is... Most of us could put up with just about anywhere for 2-3 years, but some people are more picky than others and the main thing is - DON'T WASTE YOUR TIME APPLYING TO A JOB YOU WOULD NEVER TAKE!

Keep your options open!

You may start to feel like you HATE math, you DESPISE research and you would rather shoot yourself in the face than become your advisor. If you are very frustrated with research - don't freak out and ONLY apply for teaching jobs. Apply to some post-docs too, because you might change your mind about research once the pressure is off, and if you limit your options you could end up really missing your research and regretting. LAME.

The Big To-Do List

1. Figure out what the heck a "research statement" is. Start writing yours.
2. Ask your advisor to start thinking about people/places for you to apply for the NSF. Contact the "sponsoring scientist" in September.
3. Who is writing your recommendations? Ask them nicely. Bake cookies too.
4. Get familiar with the AMS website, its job application process online, etc.
5. Do your job-finding-research - try to find ALL the possible places you could apply (postdoc, tenure track, non tenure track, lecturer, industry...) Make a big "preliminary list" of places to apply and think about it, whittle it down to your final list.

To Do List...

1. Write your damn teaching statement. It's easy.
2. Don't forget to bathe, sleep, eat some fruits and vegetables and get some physical activity. That last one is important because it actually gives you more (mental) energy.
3. Get the latex template for printing out address labels. Make your stupid address labels and keep them in a "Jobs" folder. Also, get the other things like big envelopes that you'll need. Just go ahead and stick all the labels on the envelopes so they're all ready to mail out (for the places that require physical applications).

To Do List...

1. Make plans/reservations to go to the AMS Joint Meetings in January. There are lots of job-fair-type things happening there. Look into this, register for whatever you need to register for, etc.
2. If it's possible to split off a "preliminary" result from your thesis, turn this into a short paper, edit it up so that it's polished and concise, and put this on the ARXIV. By the way, get yourself familiar with the Arxiv and how it works etc.
3. Beef up on your "mathematical history." You *really* need to familiarize yourself with the mathematicians who built up the foundations for your current research. You just need to know some of their results, their names, and look over some of their papers. There is a certain humility that is proper etiquette in mathematics and this involves learning about your elders, respecting and acknowledging their work, etc.

To Do List...

1. Look up the annoying "format" requirements for your thesis and all the University requirements, deadlines, etc. Get the Latex template for the thesis format (somebody must have one of these, just like somebody has the address label template) - put your thesis in that format immediately. Keep working with it like that!
2. The letters! You have two options - either use a form letter OR write original (but very similar) letters for each place. If you have the time/energy you should do the latter, it gives you an edge. For example, if you have met someone at the department and are interested in working with them sometime later, mention this. If you're applying for a job in a foreign country and you speak/write/read the language, mention this too.

To Do List...

1. Exposure! Get yourself exposed (in a good way) - go to some workshops/conferences where you will meet people in your field. These people might then remember you when they see your application and you could get a job that way!
2. Remember - A CHANGE IS AS GOOD AS A BREAK. You have a lot to do - when you get burnt out on one thing, switch to something different! If you're burnt out on research work, write your teaching statement or surf the web for math jobs and work on your list of places to apply.

REJECTION

Yeah, it will happen. A lot. Many times. You just have to figure out a way to deal with it so that it doesn't crush you completely every time. It does NOT mean you suck when you get rejected. There are so many things that go into the choice of job candidate - it is almost NEVER you. So just remember that, and tell yourself every time you get rejected, "They just weren't looking for someone doing my kind of research. They were looking for a number theorist and I'm an analyst. They probably thought I would be super cool and were really sad they couldn't hire me." Just don't over compensate and get an inflated ego either. Oh, ask your friends for hugs on the days you get the rejection letters. I'm sure they'll understand and be happy to oblige.

At the new job...

- Be an attention whore! Make sure *you* get as much time with him/her as *you* need with your supervisor/sponsor/mentor.
- Make things happen! You don't have an advisor to push you any more, so if you want to do well with research and/or teaching, *you* need to push yourself, stay motivated, stay busy - and you need to make sure that your supervisor/sponsor/mentor is aware of how hard you are working!!
- If you are interested in research - do NOT be a HERMIT. You must get out and meet, talk to, collaborate people! YOU CAN DO IT!! But you can NOT do it ALONE!!
- Grants, grants, money money! Learn how to apply for financial support/funding and get good at it.