Dear Maths Fresher,

Lewis (this is also his Facebook profile pic)

Emma holding a Kookaburra because the grad students were having a Harry Potter formal which meant owls and also why not

Hi! We're Emma & Lewis, 2nd year maths students at Sidney. We're your maths freshers' reps, which means we're here to help welcome you to maths at Sidney! First up – you'll hear us refer to ourselves as "mathmos" all the time – this is just Cambridge slang for a maths student, who knows were "mo" comes from, it's a mystery to us too.

Congratulations on making your offer and welcome to Sidney! STEP was tough but we all survived it, and on top of that you've made it to what we consider a brilliant college. We're a relatively small community of around 100 students per year, so even though you might feel a little daunted by all the new people at university, you'll get to know lots of Sidney people pretty quickly. There are loads of opportunities in freshers' week to meet people.

As you might have noticed, one of the best things about Sidney is the convenience of the great orange blob outside of the door – Sainsbury's. I (Emma) have been known to pour cereal, realise I'm out of milk, and pop to Sainsbury's and back all before lectures start. And for those that are less fortunate and have to live a whole 200m down the road in Cromwell court, you can rant to me (Lewis) about this (at the time of writing, I'm still in flat G). College also has a gym, gardens, music room, library, canteen and more that we'll show you on a tour. There are loads more things college has to offer, including support for welfare and finance, and in particular help from SSCSU (Sidney Sussex College Students' Union), but these people can introduce themselves and what they can offer you in your first week. That's a great thing about college life – because it's a smaller community within the University, you can find support much more easily, but still have access to the wide range of courses and societies on offer at the university as a whole.

At Sidney, we normally have around 7 maths students in a year. There are 2 Directors of Studies, Berry Groisman and Wayne Boucher and the jointly oversea the entire cohort. For this year, Dr Boucher will be your first point of contact and Dr Groisman will be responsible for parts IB and Part II. You'll meet them both in the first week, and they're both brilliant and very open to chatting and joking.

You'll also have college parents assigned to you, who are 2nd years that act as mentors, normally in a pair. In Cambridge, we like to take that family metaphor and run with it, so don't panic if you hear someone talking about their college husband/wife/grandchild/great-aunt. One of your "parents" will be a mathmo, and they'll be super happy to answer any questions you have about maths, and the other will study a different subject, and you can always chat to either of them about anything.

In first year you'll study eight courses, four in Michaelmas term (Autumn) and four in Lent (Spring). Easter term (Summer) is mainly revision and some lectures on second year content. For each course, you'll have three lectures a week which are run by the University so are with all the other first year mathmos. In lectures, typically the lecturer will write on paper which is projected onto a screen, and you copy down what the lecturer writes (although this may be different this year as lectures will run online so the format may be slightly different). It's pretty important to turn up to these, since that's

where you will learn the content, and the lectures aren't recorded. However the lecture notes are usually uploaded online and you can always ask a friend for notes, so don't worry if you have to miss one, e.g. if you're ill. If you haven't studied mechanics or physics before, there are also optional introductory mechanics lectures you can go to in first term.

Then for each course, every two weeks you get an "examples sheet" of around 12-15 problems, which normally take around 10-12 hours to complete (it can vary though, so don't worry if it takes you longer or shorter). You hand in written-up solutions to your supervisor for the deadline they set, then usually the next day you will have a supervision, in which you, the supervisor and another Sidney mathmo (your supervision partner) go through the questions you struggled with. You're not expected to be able to do a problem sheet perfectly – then you'd have nothing to talk about in the supervision! If you've spent more than 90 minutes on a question it's okay to move on. Normally you have the same supervision partner for all of first year, so you'll get to know them quite well. Supervisions might seem daunting, but your supervisors are there to help you, not test you. First year lectures have a really nice timetable of 10am to 12pm Monday through Saturday, so you'll build up a good daily routine. Then in total you'll have two supervisions a week, which are normally fairly spread out which helps with organisation. Berry will supervise you in two courses, Wayne in another, and your final supervisor will usually be from another college.

If you haven't received it already, you should get an email soon from Admissions with a letter from Berry & Wayne, a reading list and two introductory sheets. People tend to categorise maths as being applied or pure - pure maths likes more rigorous proofs and maths for the sake of maths, whereas applied can be a bit happier to accept assumptions and is more focused on applying maths to the real world. Berry likes applied, so his sheet will be roughly based on that; on the other hand, Wayne also likes applied, but for the sake of the supervision pretends pure is his specialism (we think he does biostats, whatever that is). For the reading list, you are welcome to read books during term if you want - we don't. Don't feel pressured to buy the books even though the reading list says you should. If you do want them, you can usually find pdfs online. The one book that we both found useful was "How to think like a mathematician". Other than that, we tend to find that lecture notes and the occasional Wikipedia article have all that you need to know, and there is always Sidney library if you do want to look something up – Alan the librarian is amazing.

As for the introductory sheets, you'll have a supervision on them sometime in the first few weeks, so it's a good idea to get started on them before you arrive so you don't have to worry when you get here. Again, don't panic if you can't do all the questions, Berry & Wayne can help you with anything you don't understand. It's probably a good idea to look over your A level (or equivalent) notes before you get here, but there's no need to extensively revise. They won't test you on it, but often techniques such as trig identities are assumed knowledge when you're answering questions. One way of doing this could be the introductory question booklet that is set by the maths department, rather than by Berry & Wayne. Different colleges use it differently, and Berry & Wayne don't ask you to do it, but we think it was very useful as a refresher. Then a final way to prepare would be going through some of the problems in "How to think like a mathematician", which we think Wayne expects you to do, and was useful particularly if you haven't done much maths outside of school/college before. You don't need to do every single question in the whole book, but doing some definitely helps.

For stationary, we tend to use paper and folders to organise our work, with different folders for different courses or different styles of work (e.g. lecture notes vs examples sheets), but some people prefer notebooks or even (if you're feeling fancy) drawing software on iPads or LaTeX on laptops. It can be nice to use several pen colours too to highlight e.g. key definitions/formulae. However it's

probably a good idea to go to a few lectures first and figure out what works for you before investing in lots of supplies. I (Emma) bought a planner, but ended up just putting everything on my phone calendar. Would definitely recommend having something to organise your time with – my phone calendar is the only reason I ever know what's going on in my life.

Whilst this has been a long letter about work, that's just because we're *maths* freshers' reps, so most of our maths-specific advice is about work! However Cambridge should not just be about work, or you will burn out. There are loads of opportunities to enjoy yourself outside of work – there are SO MANY societies. If you have any specific interests, just ask us and we can point you in the right direction, or there's a list on the Cambridge website of all the societies they know about, and there's a big freshers' fair that you can explore in the first week. University can be an awesome time for meeting loads of new people and trying out loads of new things, so have fun! I (Emma) would highly recommend choosing something to get you outside of Sidney, and something active to get you moving. However, it's also okay to chill out doing something else. If you want to fill your free time with sleeping, or going to Sidney bar with friends, that's perfectly okay too. Just try to get some balance in your life, and try not to fill the mathmo stereotype of not speaking to anyone ever. We all need some social time to relax and build friendships for if we fall on hard times. Personally, I (Emma) have been quite involved with the Ceilidh Band (which gets money from playing gigs so you get loads of free stuff!) and the Scout & Guide Club (Cambridge SSAGO if you know what that means), and I (Lewis) have been personally involved with sleeping and eating. (Emma would like to note that Lewis is actually a very sociable person, and is the current male welfare rep for Sidney)

We hope this is the start of an awesome three years at Cambridge for you; if you have any questions, feel free to reach out to us or any other Sidney mathmo. You can contact Emma at erc77@cam.ac.uk or on Facebook (Emma Campbell, my profile pic is me on a hike wearing a black top & red rucksack), or Lewis at lgd29@cam.ac.uk or on Facebook (Lewis Gorton). We had an excellent summary of Cambridge life in general but unfortunately the margin of this page was too small to contain it :)

See you soon! Emma and Lewis xx.