MAT A31: REMARKS ON FINAL EXAM

The final exam is cumulative, i.e. you should be comfortable with all material taught in the course. The topics below are the ones we have covered since the 2nd midterm; most of the final will concentrate on these.

(1) Your TA's name, and your tutorial number (the cover sheet of the exam is worth 5 points).

(2) Injections, surjections, bijections, relation to countability vs uncountability.

(3) Formal definition of a function; concept of $A \times B$.

(4) $\lim_{x \to a} f(x) = L$: what this means, how to prove it.

(5) Same for $\lim_{x \to \infty} f(x) = L$.

(6) How to prove that $\lim_{x \to a} f(x)$ doesn't exist.

(7) Squeeze theorem, and its proof.

(8) $\lim f + g = \lim f + \lim g$; $\lim fg = (\lim f)(\lim g)$, etc. Although it won't be asked exactly, you will find it helpful on the exam to understand the proof of the second statement above (that the limit of a product is the product of the limits).

(9) You should understand how to phrase limit statements in terms of the concept of neighbourhoods, and vice-versa.

(10) Left- and right-handed limits.