

CALCULUS 153: MIDTERM 1 REVIEW SHEET

You should know all the theorems and definitions that were given in class. I might ask you to state some of them. Here are the proofs that you should know:

- (1) The proof of theorem 11.1.2 (if $M = \sup S$ and $\epsilon > 0$ then there is $s \in S$ such that $M - \epsilon < s$).
- (2) The proof of theorem 11.3.6 (a nondecreasing sequence which is bounded above converges to the least upper bound of its range).
- (3) The proof of theorem 11.3.7 (i) ($\lim(a_n + b_n) = \lim a_n + \lim b_n$).
- (4) The proof that $x^n/n! \rightarrow 0$.
- (5) The proof that $x^{1/n} \rightarrow 1$ for $x > 0$.

Also, any of the homework problems are fair game (I've provided solutions to the ones that required a proof).