Homework
due on Friday, April 15

Read carefully chapters 8, 9, 10.1-10.3 and 10.5 in the book. Solve the following problems.

Problem 1. Prove that $(1+x)^n \leq 1+(2^n-1)x$ for any $x \in (0,1)$ and every positive integer n (do induction on n).

Problem 2. Solve the equation $|x+3| - |x-2| = 5$. Hint: Consider various cases so you can remove absolute value. For example, when $x < -3$ then the equation is equivalent to $-(x+3) - (-(x-2)) = 5$.

Problem 3. Solve the inequality $|x-1| + |x+3| < 6$. The answer should be given as union of intervals.