Math 1a Section 1

Homework 2

Due noon, Monday, October 17, 2011

All numbered exercises are from the textbook, Calculus by Apostol.

1. I 4.10.3 (in this exercise you'll need the definition of the binomial coefficient $\binom{n}{k}$ at the start of section I 4.10)

2. I 4.10.4

3. 9.6.12

4. 9.10.4

5. Let $x = 1 + y > 1$ be a real number. Show that $x^n > 1 + ny$ and deduce another proof of the fact that the sequence $(x_n)_{n \geq 1}$ where $x_n = x^n$ is divergent, i.e., it does not have a limit.