

Math 215. Homework 3

due 02/4/08

Problems from the textbook p. 54 and 55.

7, 9, 12, 14, 15, 16

1. Show that sum of two non-decreasing functions is non-decreasing.

2. Show that there is an integer N such that all numbers $N, N + 1, \dots, N + 10^7$ are composite.

3. Show that for $n = 2^m$ and $a_i \geq 0$ one has:

$$\frac{a_1 + \dots + a_n}{n} \geq (a_1 \cdot \dots \cdot a_n)^{\frac{1}{n}}$$