

Math 724, Fall 2013
Homework #2

Instructions: Write up your solutions in LaTeX and hand in a hard copy in class on **Friday, September 20**. Collaboration is allowed (and in fact encouraged), but each student must write up his or her solutions independently and acknowledge all collaborators.

(#1) Chapter 1 Supplementary Problem #5.

(#2) Chapter 1 Supplementary Problem #11.

(#3) Problem #37.

(#4) Problem #49.

(#5) Problem #52.

(#6) Problem #56.

(#7) Problem #64.

(#8) Problem #69.

Extra credit (based on a problem in Bona): Let $P < Q$ be positive integers. The students in a class are assigned to P groups for in-class group work. (Each group has at least one student in it.) One day a substitute teacher comes in and rearranges the students into Q groups. Prove that at least $Q - P + 1$ students end up in smaller groups.