

## Math 213 - Homework 9

Assigned: 10/17/07

Due: 10/24/07 at the start of class.

Notation: Exercise a.b.c(d) stands for part (d) of Exercise c from Section a.b.

Problems:

- (1) 7.5.8.
- (2) 7.5.12.
- (3) 7.5.20.
- (4) If  $|A \cup B \cup C| = |A| + |B| + |C|$ , does it follow that  $A$ ,  $B$  and  $C$  are pairwise disjoint? (No reasoning necessary to get full credit).
- (5) How many solutions to

$$x_1 + x_2 + x_3 = 13$$

are there with  $x_1, x_2, x_3$  non-negative integers all less than or equal to 11? (This is similar to 7.6.3 and 7.6.4 but easier).

- (6) 7.6.6.
- (7) 7.6.8.
- (8) 7.6.12.
- (9) 7.6.16.
- (10) Suppose that you are teaching three classes. The first class has 10 students, the second class has 25 students, and the third class has 100 students. On one particular day, you return homework papers returned randomly to the students in each of the classes. In which class is it most likely that some student gets their own paper?