

# STAT/MA 416 Fall 09 Section 002

## Homework 1

Due: August 31, 2009, 9:30am

Please show all your work, don't just write down the final number.

- Reading: Chapters 1-2.

- Exercises:

- Problems 2.2.1, 2.2.3, 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.13, 2.3.1, 2.3.3, 2.3.5
- Ross's book (7th ed):

2.9 A retail establishment accepts either the American Express or the VISA credit card. A total of 24 percent of its customers carry an American Express card, 61 percent carry a VISA card, and 11 percent carry both. What percentage of its customers carry a credit card that the establishment will accept?

2.12 An elementary school is 3 language classes: one in Spanish, one in French, and one in German. These classes are open to any of the 100 students in the school. There are 28 students in the Spanish class, 26 in the French class, and 16 in the German class. There are 12 students that are in both Spanish and French, 4 that are in both Spanish and German, and 6 that are in both French and German. In addition, there are 2 students taking all 3 classes.

(a) How many students are not in any of these classes?

(b) How many students are taking exactly one of these classes?

2.13 A certain town of population size 100,000 has 3 newspapers: I, II, and III. The proportions of townspeople who read these papers are as follows: I: 10 percent; I and II: 8 percent; I and II and III: 1 percent; II: 30 percent; I and III: 2 percent; III: 5 percent; II and III: 4 percent. (The list tells us, for instance, that 8000 people read newspapers I and II.)

(a) Find the number of people who read only one newspaper.

(b) How many people read at least two newspapers?

(c) If I and III are morning papers and II is an evening paper, how many people read at least one morning paper plus an evening paper?

(d) How many people do not read any newspapers?

(e) How many people read only one morning and one evening paper?