

Math 408, Spring 2008  
HW Assignment 1, due Friday, 1/25/2008

**Name (print please):**

**Instructions**

- Use this sheet as cover sheet and **staple** it to the assignment.
- Write your name **legibly** in the space above; if necessary, underline your last name. If your name is not clearly and unambiguously identifiable on the class roster, we cannot credit you for the homework.
- Do the problems in order, and make sure that each problem is clearly labelled.
- Show all work; an answer alone will not earn credit.
- **Due date:** The assignment is due **in class** Friday this week; late homework, or homework dropped off in mailboxes, will not be accepted. You can, however, turn in the homework early, in my office, 241 Illini Hall, any time before the due date.
- **Open House:** Wednesdays, 5 pm - 6 pm, 141 Altgeld. This is an informal office hour for students in my classes (Math 370, 408, 453). Feel free to stop by with questions about the homework or anything else relating to this course!

**HW 1 Problems (from Hogg/Tanis, 7th edition)**

**About these problems:** The first (1.1-13) taken from an article titled “How numbers can trick you” is a real-world illustration of the so-called Simpson’s Paradox. Do the calculations required for (a) and (b). Why is the result counter-intuitive (hence the term “paradox”)? Can you think of a reasonable explanation for this apparent paradox? (The latter are open-ended questions and not suitable for grading, but we might discuss this at some point in class.)

The other problems in 1.2 and 1.4 are routine exercises in applying basic probability and set theory rules. Make sure to use proper notation (e.g., write  $A \cup B$ , not  $A + B$  when  $A$  and  $B$  are sets, and  $P(A \cup B) = 0.9$ , not  $A \cup B = 0.9$ ). Draw Venn diagrams in more complicated situations.

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|---------------------------------|--------------------|
| 1. Section 1.1: 13(a)(b)        | 6. Section 1.2: 9  |
| 2. Section 1.2: 2(a) (b)(i),(v) | 7. Section 1.2: 12 |
| 3. Section 1.2: 6(a)(b)(c)      | 8. Section 1.2: 13 |
| 4. Section 1.2: 7               | 9. Section 1.4: 2  |
| 5. Section 1.2: 8(a)(b)         | 10. Section 1.4: 5 |